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LECTURES ON SURGERY,

MEDICAL AND OPERATIVE,

DELIVERED AT

St. Bartholomew's Hospital;

BY MR. LAWRENCE.

LECTURE LXXVII.

Urinary Organs, continued.—Treatment of Stricture, resumed.—Puncturing the Bladder.—Ulceration of the Urethra; Treatment.

Treatment of Stricture of the Urethra, continued.—After *stricture* of the urethra has been relieved by the means which I described to you in the last lecture, after the dimensions of the canal of the urethra have been gradually enlarged or restored to their natural state by the treatment I then pointed out, we frequently find that the patient, having remained for a considerable time quite well, experiences a relapse of the complaint; that the contraction of the canal slowly returns, and we are obliged to have recourse to the same treatment again; hence it is expedient, in certain cases, to introduce an instrument from time to time, once in two or three months, in order to prevent the contraction of the stricture, to which there is a great tendency in those cases. Although we have in these cases removed the stricture at the time, we cannot venture to tell the patient that he is completely and effectually cured, because we find that the disease often recurs.

In bad cases of stricture, the treatment I mentioned to you in the last lecture very often produces little effect. A long period of time is necessary to overcome the contraction, to restore the urethra to such a size as will enable the patient to evacuate his urine with comfort; and hence surgeons have been anxious to discover some means for more speedily, effectually, and radically, relieving patients who labour under stricture of the urethra. They have considered that the cure produced by the employment of bougies, sounds, or the instruments I described to you in the last lecture, is effected by dilatation; therefore, they have an idea that, when the dilating means are no longer employed, the contraction is likely to recur; hence they have supposed, that, if means could be used by which the constricted part may be destroyed—not simply dilated, but entirely destroyed—the cure would be more effectual and permanent, that we could more safely depend on a complete relief from the symptoms. The idea of employing caustic for this purpose was introduced long ago. Wiseman speaks of this application. Hunter endeavoured to employ it in strictures of the urethra; and he states that he introduced lunar caustic to the contracted part by means of an instrument like a porte-crayon. Sir E. Home, the brother-in-law of Mr. Hunter, adopting this idea, endeavoured to accomplish the purpose in another way; that is, he included a piece of the nitrate of silver in the end of the common plaster bougie, which, as I have before mentioned, is made of cloth impregnated with a certain composition, cut out into pieces of a flat shape, and afterwards rendered round by being rolled up; now, instead of closing the end of the instrument, a piece of caustic was inserted into the extremity of the plaster bougie, which was afterwards closed around it. The mode in which those *armed bougies*, as they are termed, are employed, is this: a bougie of good size—a plain bougie—is introduced down to the stricture (and Sir E. Home seems in general to be favourable to the employment of a bougie of *full* size); then having measured, by making a mark with the nail on the bougie at the orifice of the urethra, the exact situation at which the constricted part is found, a caustic bougie of the same size as that by which the situation of the stricture is marked out, and which has been previously employed, is carried down to the stricture, and held there for a certain time, so that the end with the caustic should be applied to the contracted part of the urethra. This mode of treatment is directed to be persisted in until

the contracted part to which the caustic has been applied shall be removed, until, by repeated applications of the escharotic, the contraction shall have been burnt away, so that the bougie may go on further; and, if another obstruction be found, the same application is to be used there, until the bougie shall gain a passage into the bladder. This is the general mode of using an armed bougie, recommended by Sir E. Home. He describes this mode of treatment as very effectual; as destroying the contracted portion of the urethra, (so that a full-sized bougie will pass into the bladder within a short time,) and as being applicable to almost all cases; so that, according to his description, the general treatment of stricture would consist in the application of caustic to the constricted part in the way I have mentioned to you; and, if we are to credit the description which he gives, nothing would be more safe or effectual than this mode of treatment. When we come, however, to peruse the cases he gives in illustration of the various points of the treatment, we find that serious mischief is sometimes produced by this mode of treating stricture; and, as he is highly favourable to the plan, we may, at all events, suppose that he has not exaggerated the ill effects of the treatment; yet taking them as he has given them, we find that this mode of applying caustic frequently produces profuse hæmorrhage—alarming hæmorrhage we may say, for it cannot fail to alarm the patient—and I think we may also say dangerous hæmorrhage, for it is very profuse, and is repeated every time the application is made; so that if the surgeon be tolerably resolute, and is determined to burn on according to the plan recommended, the patient may lose a very considerable quantity of blood indeed. False passages are also occasionally made; that is, instead of burning a hole through the stricture, perhaps a hole is burned through one side of the urethra. Inflammation of the urethra, inflammation of the cellular substance surrounding it externally, abscess and fistula in perineo, increased difficulty of making water, aggravated to retention of urine, serious constitutional disturbance, amounting to considerable fever, and in many cases taking the form of intermittent fever or ague; these are some of the symptoms, and some of the effects which, according to the cases brought forward by Sir E. Home, the great patron of this mode of treatment, are frequently produced by the application of caustic in the particular way I have described.

The dangerous nature of this treatment led a surgeon of the name of *Whately*, to employ another plan of treating strictures by caustic. He made a small opening with a pin in the end of a plaster bougie, and introduced into that opening a small portion of the *kali purum*, or *potassa fusa*. The potass being enclosed in a piece of paper, and broken, he took one of the minute fragments and introduced it into the opening which had thus been made, covering the end of the opening in the bougie afterwards with a piece of common cerate, and then carried it down to the stricture, and moved it backwards and forwards against it. Now, Mr. Whately seems to have been as cautious in the employment of this substance, as Sir E. Home was bold in his use of lunar caustic; for he recommends you to take a fragment of potassa fusa not larger than the *seventeenth part of a grain!* And he says he never used a portion larger than the twelfth part of a grain. Now I should suppose that if a fragment of this kind be put into the aperture of a bougie, and if that aperture be filled up afterwards with cerate, it would make very little difference whether the fragment of the potassa was inserted into the one or into the other end of the bougie. We know that an alkali and any fatty or oily substance brought into contact make soap, so that this plan has been called by some *soaping the urethra*. I should conceive, according to the description Mr. Whately has given of it, that it is just capable of doing that good which the simple introduction of a plain bougie can effect: and I cannot think it has any effect whatever as an escharotic; however, if it were a good plan, you would employ the potassa fusa more freely than he has recommended; it is certainly a more cautious way than using the armed bougie in which a large piece of the nitrate of silver is carried into the urethra. A French writer has lately devised an instrument by means of which the lunar caustic in substance is applied to the interior part of the stricture. His instrument is well constructed, and may, perhaps, deserve a trial in those cases in which it may be deemed fit to employ caustic.

From the various results which attend the free employment of caustic in the urethra, I think that we may safely say, it is a mode of treatment not applicable to bad cases of stricture; that is, cases where the change of structure is considerable, and the contraction is very extensive; and in cases not so serious, we know that the application of caustic is not necessary; for the simple bougie sound or silver catheter will accomplish the object we have in view. The use of caustic has, in general, been very little favoured on the continent; they have generally treated strictures there without it, and have been averse to it from knowing its ill effects; it has been partially employed in this country, but never got into very great use, and, I believe, has been generally less and less used, so that at present it is but seldom

adopted in the treatment of stricture in the urethra.

When the urethra has been diseased for a considerable length of time, and no treatment has been employed to prevent the progress of disease, more especially when persons have lived freely and indulged in drinking, we often find that the mucous membrane of the urethra becomes greatly altered, and the structure much thickened and hardened, so that it constitutes a firm cartilaginous ring, totally different in appearance from the natural textures of the part. Frequently, a certain length of the urethra is altered in this way, so that you have a contracted portion measuring perhaps half an inch, three quarters of an inch, or an inch in length; at the same time, the dimensions of the affected part become considerably reduced. The difficulty in evacuating the urine becomes more and more considerable; the stream, which at first is rendered small, becomes extremely minute, and perhaps the patient can no longer void his urine in a stream at all, but passes it simply by drops, and with considerable straining and effort. The dimensions of the diseased part of the urethra are so reduced, that a slight aggravation of the mischief converts the difficulty of making water into absolute retention of urine, and brings the patient from a state of great suffering and pain only, into one of very considerable danger. The bladder is not effectually emptied under such circumstances; some portion of the urine always remains behind. The constant residence of urine in the bladder produces inflammation of the mucous lining, and excitement of the muscular coat, of the bladder, with increased efforts of the latter to expel its contents: it produces repeated and urgent attempts to expel the urine, the continued presence of which causes constant pain and uneasiness of the bladder and neighbouring parts, and in this way the bladder becomes very considerably changed in structure, the mucous membrane is inflamed and thickened, and the muscular coat which covers it also becomes very much thickened; so much so, that you would hardly recognise it as being the muscular coat of the bladder, which, in the natural state, as you know, forms a very thin expanded stratum of fibres, between which the mucous lining is visible. In some of these diseased bladders, you find a thickness of the muscular coat nearly equal to that of the gluteus maximus. Here is a specimen of diseased bladder, in which the muscular coat is nearly equal in thickness to my fore finger; a thickening consequent on stricture of the urethra. Here are other specimens showing the same fact. The thick muscular fibrous substance of the bladder, in this condition, is really not at all like the thin muscular fibres of the natural healthy organ.

When the bladder is thus inflamed on its internal surface, and thickened in its muscular coat, it frequently happens, that incontinence of urine takes place, a state which appears at first view to be just opposite to that which you would expect to find in stricture of the urethra. The narrowing of the canal in stricture of the urethra, of course, primarily produces an impediment to the passage of the urine from the bladder, but, in this particular case, when the stricture has lasted for a very considerable time, and has become of itself very considerable, incontinence of urine takes place. The manner in which this condition arises is this. The forcible contraction of the thickened bladder expels the water in small quantities into the urethra, the resistance of the neck of the bladder being no longer able to counterbalance the contractions of the thickened muscular coat; and the urethra is thus kept full, up to the point at which the stricture is. In the natural state, of course, there is no water in the urethra, because the contraction of the sphincter vesicæ counterbalances that of the muscular coat, and retains the urine in the bladder till a voluntary attempt is made to force it out; but the involuntary and violent contractions of those changed parts, overcome the strength of the sphincter vesicæ, force out the water, and fill the urethra, and, as the latter is thus kept filled behind the stricture, a certain quantity is continually passing through the contracted part, impelled by the action of the respiratory and abdominal muscles, as well as the continued action of the distended bladder, and thus it is that incontinence of urine takes place in these cases. Again, the irritation which is kept up in the urethra, by the distention of the canal, and by the forcible attempts made to urge the water forward from behind the stricture, produces inflammation in that part of the canal, and this goes on to the formation of abscess which bursts externally, and through that opening, not only the matter but the urine escapes, which prevents the closure of the aperture again, constituting what is called *fistula in perineo*.

The preternatural opening thus produced relieves the patient for a time, it allows a more ready escape for the urine, it takes off the pressure from the posterior part of the urethra, and thus relieves the patient from the more urgent symptoms; however, as the stricture of the urethra continues, and as the fistula contracts, the difficulty and inconvenience are renewed; other abscesses take place, and repeated fistulæ are formed. In this way, patients with bad strictures of the urethra often have successive inflammations, producing general condensation, and thickening of the cellular texture of the perinæum and about the scrotum, and the

perforation of the thickened membrane, with numerous fistulous openings through which the urine is more or less completely discharged, and thus they are ultimately reduced to a very miserable condition. The repeated evacuations of the urine which occur through the scrotum, the inflammation which is produced, the abscesses which form, the urgent desire to void the urine—all these circumstances together bring the patient into a state which renders his life perfectly miserable.

It is, of course, very desirable to find out some means effectually to relieve a person from such a wretched state, and various measures have been proposed for this purpose. In such instances it is sometimes impossible to introduce any instrument into the bladder; we may, perhaps, be able to succeed in getting a very small instrument in, but if we do, we find it gives but little relief; and if we prosecute the cure of those cases, by the introduction of the common bougie, we find that the proceeding is very tedious, and we make way but very slowly in removing the disease of the urethra. It has been proposed, therefore, in those cases to introduce an instrument by main force, through the contracted part of the urethra, and the instrument employed for this purpose, is a conical sharp-pointed silver catheter, which is called by the French *sonde conique*. It is made thick at one end so that it may be strong, and it is brought to a tolerably sharp point at the other. You are directed to pass this down to the stricture, and then to carry it down steadily, in the direction of the axis of the canal, in spite of any obstruction you may meet with. Now it is very easy to direct you to carry an instrument of this kind in the axis of the canal of the urethra, but it is by no means so easy to do it. A variation of the twentieth part of an inch will make the difference between its going along the line of the canal of the urethra, and out through the side of it altogether; therefore it is impossible for any one, however accurate his knowledge of the anatomy of the part may be, to introduce an instrument of this kind, and to thrust it forwards, so as to be certain that he will not puncture the side of the canal. It is, in fact, a completely blind thrust; if you carry it directly through the urethra, and into the bladder, it is lucky for the patient, but the chances are much more in favour of your pushing it through the side of the urethra, and carrying it on through a new passage, if it is carried into the bladder at all. The sharp point of this instrument will enable you certainly to carry it into the bladder in some way or other; you may carry it through the side of the urethra, under the bladder, and then into it. It is then said, that, having carried it into the bladder, you must leave it in the bladder, and that, after being there a few days, it will get loose, when you may take it out, and gradually increase the size of the instrument. Now it must be very apparent to you that this is a coarse, rude, painful, and unscientific proceeding. You will not be surprised at hearing, that it has often produced aggravation of the symptoms, that it has brought on serious inflammation, that it has caused suppuration in the parts which have been the subject of such violence, and that, in fact, in the already reduced and exhausted state to which patients are brought, by the existence of so serious a disease, the aggravation of the mischief by using an instrument of this kind has proved fatal. I say there are no cases of bad stricture under urgent circumstances, in which you might not carry an instrument with some degree of force into the bladder; but then I should use a catheter of small size; and, in a case where you know the details—the local details, if I may use the expression—where you have already seen the patient, and have been in the habit of introducing a catheter, you may introduce a small one in this way, carrying it pretty much by main force into the bladder. There are cases in which such a thing may be done, although it is difficult to describe in a general way where it should be done, and where it should be avoided. When I speak to you in terms of reprobation of forcing an instrument into the bladder, I speak of the general plan of treatment, and I consider it, as a general plan of treatment, objectionable, although you may use a certain degree of force in some cases, when you are quite confident that you are carrying the instrument in the proper direction, and that you are using that force with safety to the patient.

The application of caustic has been considered a proper mode of treatment in those bad cases of stricture; but the various reasons I have already enumerated, make it a very undesirable mode of proceeding in cases of this kind. Inflammation is the great cause of mischief in those instances, and unquestionably you run a great risk of aggravating inflammation, and of increasing the sufferings of the patient by the application of caustic. I do not consider it an advantageous mode of proceeding; on the contrary, I think there is great risk of aggravating the mischief which, by its use, already exists. Another mode of proceeding has been that of making an incision in the perineum, and cutting down upon the contracted part of the canal; having previously introduced an instrument from the orifice of the urethra down to the situation of the stricture, taking that as the guide, cutting down upon it through the integuments and

soft parts in the perinæum, and, having found its extremity, carrying a fine probe through the stricture, dividing the thickened part, and passing the instrument forwards into the bladder. This is a very difficult and very uncertain piece of dissection. You are cutting through parts which are thickened and indurated, and which, therefore, are exceedingly changed in their condition and relative position, in consequence of disease; you are cutting, therefore, almost completely in the dark, at a considerable depth from the surface; and, in consequence of that circumstance and of the blood which is poured out during the operation, you can see but very indifferently what you are about, and in some cases it has been found that the parts have been cut very differently from what was intended; even the bladder and other parts having been wounded, and as much or more cutting produced than would be necessary for the performance of the lateral operation for the stone. The result of these operations has been very unfavourable and fatal, so that, considering the whole, I cannot regard this as a desirable mode of proceeding generally. Another mode of proceeding has been proposed by Mr. Stafford, a gentleman who was house-surgeon at this hospital. When I say proposed, I should rather say revived, for it is a plan which was in existence before; this is, the plan of introducing down to the stricture a catheter which shall convey in its cavity a lancet, capable of being protruded from the end of the instrument. Supposing, therefore, in a case of stricture, that the canal is so small and so hard, that no instrument whatever can be introduced into it, the mode of proceeding adopted by Mr. Stafford in such a case would be, to employ an instrument such as I now show you, consisting of an ordinary catheter, split at the end, and containing in its interior a lancet, which can be propelled forwards by a spiral wire spring, connected with the other end of the instrument. I fancy there is a screw by which you can regulate with proper precaution the distance to which the lancet may be projected, so that you can send it out an eighth, a quarter, or three quarters of an inch, and so on. You will observe, that, by pressing down this spring, the lancet projects through the slit in the catheter, and, of course, when it is thrust out in this way, it will cut through the whole of the substance with which it comes in contact; then you draw back the lancet, and if a sufficient opening is made, an instrument will pass through it, or you may repeat this process from time to time, till you have cut through it to an extent allowing the catheter to pass along. In cases where the stricture is very bad, and the canal very small, where such an instrument can hardly be introduced, Mr. Stafford employed another mode of proceeding: he has a very small canula, like a sort of small catheter, with an opening at the end; through this canula he introduces a wire, so that the wire will pass through the stricture; then, having withdrawn the canula, which has been passed into the urethra, and served to conduct the wire to the stricture, he carries over the wire which has been thus introduced, one of his instruments containing a lancet, which is, in fact, divided into two parts, so that, when it is thrust out, it cuts on each side of the wire which has previously been introduced into the stricture; the wire, therefore, forms a kind of guide, by which the lancet is carried directly into the stricture. It appears to me, that this mode of proceeding, when cautiously adopted, is safer with respect to the patient, than either of the methods I have just described, and that, in many instances, it will be effectual in making an opening through a contracted portion of urethra. I have not seen these instruments frequently employed myself, but I have seen them used in some cases, and I have not seen any harm whatever result from their employment, while, in one case particularly, which I had the opportunity of seeing with Mr. Stafford, after the repeated introduction of an instrument of this kind, and, by means of its employment, carrying in the instrument through a large portion of the contracted part of the canal, a full-sized catheter was ultimately passed into the bladder. I was present when this was done: it was introduced into the bladder of a gentleman who had not had an instrument beyond the smallest size passed through the stricture for many years before, and who had been labouring all that time under the pain and difficulty attending a stricture of that sort; and at the time the instrument went in, had been voiding his urine by drops, and with great difficulty, for a long time previously. The introduction of the instrument immediately liberated him of about three pints of strongly ammoniacal and highly offensive urine, and ever afterwards a large instrument could be introduced. I should conceive, therefore, that this plan of Mr. Stafford is one well deserving a trial in these bad cases of stricture of the urethra.

In the case of stricture of the urethra, where the contraction is considerable, I have mentioned to you, that the introduction of instruments may easily bring on complete retention of urine; that the accession of inflammation, produced by any external cause of irritation, such as the use of instruments or caustic, or by any internal cause, such as imprudence in diet, excess in drinking, and so forth, is capable of converting the difficulty of making water into actual retention, and the patient finds that he cannot

void his urine at all. It has been commonly said, that the retention of urine in these cases arises either from inflammation of the urethra, or from spasm affecting the strictured part, but I confess I am unable to point out the difference between those two states, and, in fact, I believe there is no difference between them; still less can I see the propriety of a threefold division of these cases —retention from stricture, retention from inflammation, and retention from spasm. In fact, inflammation is the essential condition, for it produces a narrowing of the urethra; and an accession of inflammation in an already strictured portion of the canal produces actual retention of urine. The idea of spasm in these cases may have arisen from the notion which some entertain respecting the *muscularity* of the urethra. I am not aware that the canal of the urethra is, generally speaking, muscular; it seems to me to be altogether different from a muscular organ. There is a certain portion of it which has muscular fibres placed exterior to, and surrounding, it, on the outside, but the rest of the canal, as it seems to me, does not possess muscular structure. Again, the administration of opium sometimes relieves retention of urine, and opium being deemed an antispasmodic, it may have been supposed that this state arises from spasm in the canal.

When retention of urine comes on, the local pain, and the whole of the symptoms, are aggravated; a high degree of constitutional disturbance arises, for you have complete obstruction of that excretion which takes place through the medium of the urinary organs. When a complete retention of urine is produced, it seems to influence, in some measure, the secretion of the urine. The secretion goes on at first certainly with freedom, but the difficulty of the excretion appears soon to produce defect in the secretion, and you all know that that will have a most important influence on the animal economy. I need not mention, that it must have the most important influence on the system generally. The urine is confined, and accumulates in the bladder, which it distends; it causes a firm swelling in the lower and anterior part of the abdomen: you find a hard tumour above the pubis, circumscribed and rising from the pubis; this tumour rises higher and higher up in the abdomen as the accumulation goes on, reaching to the navel and higher; pressure on it produces more or less pain, in general according to its extent. In this state the patient experiences repeated and most painful efforts to make water; there is a constant desire to liberate the bladder from the urine which accumulates in it; involuntary efforts are made for that purpose, with great aggravation of the patient's sufferings. In considering, therefore, that the symptoms under which the patient labours arise from retention of urine, you must direct your careful attention to the consideration of the bladder. If the patient does not make water, that does not show, of itself, that there is retention of urine; a person may not make water, in consequence of no water being secreted; there may be suppression of urine, that is, there may be a deficiency in the action of the kidneys, there may be *ischuria renalis*; but the retention of the urine is mainly indicated by the distended state of the bladder, and that is a necessary symptom to enable you to determine that retention of urine exists. The retention may be total, or it may be partial. When we say that a patient has retention of urine, we do not mean to imply by that expression that no urine whatever escapes from the urethra; on the contrary, incontinence of urine, as I have mentioned to you, is one of the symptoms attending retention; and, in the same way, there may be a partial escape of urine through the urethra of a person who has retention of urine. The mere circumstance, therefore, of urine coming away involuntarily, must not deceive you in such a case; you must examine the state of the abdomen, to see whether that tumour, which will be the consequence of the distended bladder, exists in the hypogastric region.

The treatment in those cases, where the cause of the symptoms is inflammation, should of course be antiphlogistic. You must, of course, take blood either from the arm, if the condition of the patient admits of it, or by the application of numerous leeches to the perineum, or region of the bladder. Let the patient go into the warm bath, or the hip-bath, or apply fomentations, or sponge the perineum and lower part of the abdomen with warm water; give active aperients which will operate quickly, such as calomel, jalap, or castor-oil, or the ordinary purging mixture; follow this up afterwards with the free exhibition of antimonials, the tartrate of antimony. In many cases, after bleeding, the use of active purgatives and of the warm bath, effective and speedy relief will be experienced by the administration of opium, in large doses; give a draught, containing a drachm of the *tinctura opii*, in the evening, and about two hours afterwards repeat the dose. In these cases the late Mr. Cline recommended, and was in the habit of employing, the *tinctura ferri muriatis*, giving ten or fifteen drops of it, and repeating the dose every ten or fifteen minutes. I believe general experience has not led to the placing of any very great confidence in the use of this remedy; I have seen it administered, however, in certain cases, where the evacuation of the urine, by

the natural course, has come on afterwards, but I have not, I think, in general seen it employed alone, so that I can hardly say that, in any case, I think the influence of that particular remedy has been the means of relieving the patient. The antiphlogistic treatment, therefore, and that of an active kind, and then the exhibition of opium pretty largely, will be, generally, the most effective plan.

Now when a patient has retention of urine, the idea naturally arises in his mind, that the surgeon ought to draw off his water; he expects that the catheter shall be introduced, and is rather disappointed if the surgeon cannot do this and liberate him from the inconvenience which he suffers; but as inflammation is the cause of the mischief in these cases, you would hardly suppose that the introduction of an instrument would be likely, as a general means, to be very advantageous; indeed, it is very capable of aggravating the mischief which exists; therefore in instances of this kind, where the retention depends on inflammation in the urethra, it is desirable to do all we can to overcome that inflammation, before we attempt the introduction of an instrument, and to endeavour to relieve the patient, if we can, without the introduction of an instrument at all. If, however, the employment of the means I have mentioned to you should not be productive of relief, we should then employ an instrument; a small bougie may be introduced, and, if it can be passed through the stricture, it may be allowed to remain for a short time, and then withdrawn; or a fine elastic catheter, with a stylet, may be introduced for the same purpose, and it is not necessary to pass it into the bladder, for if you pass it beyond where the stricture is, the patient will be relieved; or a small silver catheter may be used for the same purpose, and, being of a harder substance, will enable you more easily to pass the stricture, though you must take care that you do it with a safe degree of force. If you introduce such an instrument into the bladder, and let off the urine that has accumulated, the question will occur, whether you should leave it there or withdraw it, and introduce it again if the difficulty of passing the urine recurs. Now, if the presence of the instruments does not excite pain and uneasiness, and if you have introduced an elastic catheter, it is well to leave it in its situation, confining it to the extremity of the penis, and, by putting a plug into it, the patient can draw off the water as it accumulates; but if, as it frequently happens, the instrument produces great pain and uneasiness, it will be necessary to take it out, and to trust to your power of reintroducing it when you can. If you are able to leave it in the bladder without uneasiness, it will commonly be quite unnecessary to leave it longer than forty-eight hours, for you will then be able to take it out to introduce a catheter of full size, and the patient is completely relieved from the disease.

Supposing you should not be able to introduce an instrument of any kind into the bladder, after the treatment you have adopted for the relief of the patient labouring under symptoms of retention of urine, what course then would you adopt? In such a case, the patron of the conical-pointed sound, to which I have already alluded, recommends the introduction—the forcible introduction—of it into the bladder, against which all the objections I have before mentioned as applying to it may be made. If this be not done, the only other measure consists in puncturing the bladder, by which you get rid at once and completely of the cause of the mischief; you relieve the stricture from the pressure of the urine against it, you remove the accumulation from the bladder, and, by leaving a canula in the opening which you have made, you provide a remedy against any recurrence of the evil; you have the power of relieving the patient when you like; you have the advantage in this proceeding of emptying the bladder without any irritation to the urethra; you completely take away from the urethra any source of irritation or inflammation, and leave the canal in that quiet state in which it will recover its natural condition; and you find, in a short time afterwards, that you may introduce, if necessary, an instrument of sufficient size for all the requisite purposes; the pressure against the strictured part of the urethra is removed, the inflammation in the canal subsides, and the canal recovers, to a certain degree, its natural dimensions. You place the canal, therefore, in the state most favourable for recovery by the operation of puncturing the bladder; but if you force an instrument through the stricture, and leave it there, you of course keep up the irritation in the urethra; in fact, you add to it a fresh source of irritation by the presence of a foreign body; and, comparing the two measures together—that of forcing an instrument through the urethra with that of puncturing the bladder—I consider the latter to be decidedly the most advantageous.

Puncture of the Bladder.—Puncture of the bladder may be effected in different situations. You may make an opening into the bladder above the pubis. When the bladder is distended it rises above the pubis, elevating the peritoneum and separating it from the anterior surface of the organ and the abdominal muscles; so that, behind those muscles, instead of having a peritoneal covering, you have the anterior surface of

the bladder itself confined merely by cellular membrane, and you may, therefore, plunge a trocar into the hard swollen substance which you feel just above the pubis, and thus let off the accumulated urine. Supposing the bladder should have risen as high as the navel, you may introduce the trocar midway between the navel and pubis; but if it has not risen so high as that, you would introduce it lower down. You should not introduce it as you introduce a trocar, in the operation of paracentesis abdominis, directly backwards, but you should direct the point of the trocar downwards, so as to accommodate it to the situation of the bladder. In ordinary circumstances, the common trocar which is used for tapping will do for puncturing the bladder above the pubis; but if you were to operate on a very fat subject, you would not find it long enough; you would find it necessary to make a previous incision through the integuments and adipose substance, so that afterwards you would only have to puncture through the abdominal muscles and bladder, therefore a longer canula is required. You would use such an instrument as is used in puncturing the abdomen, then withdraw the stylet, and passing an elastic catheter through the canula, leave it in the bladder, so as to allow you to draw the urine off, should it again accumulate; the end of the catheter is to be fastened by a tape passed round the body, and stopped with a plug, which is to be taken out when you wish to let off the water It is a very easy proceeding when performed in this way; I have done it several times, and I never saw any ill effects result from the mere puncturing of the bladder. Another mode of proceeding in puncturing the bladder is from the rectum; the under surface of the bladder rests on the rectum; you introduce your finger into the rectum, and feel a large tumour pressing downwards upon it; you may be satisfied that it is the bladder, and if you use a curved trocar and puncture the middle of the tumour with it, you evacuate its contents. You guide the point of the trocar between the two fingers of the left hand, directly into the rectum, carry it upwards and forwards, that is, in the axis of the bladder, and you cannot fail to make a puncture into the organ, and to evacuate its contents in that way. I have never seen the plan of puncturing the bladder from the rectum adopted, and, therefore, in mentioning it to you, I may add, that it is said the canula may be withdrawn, and the patient will void his water himself through the opening thus made. I only mention it from what is stated; I cannot state it from my own knowledge. Of course it would be inconvenient to leave a canula permanently in the anus, which you would have to do if you were to follow the plan that is adopted in puncturing the bladder above the pubis; it is said, however, that it is not necessary to do that where the bladder has been punctured through the rectum.

The bladder has also been punctured through the perineum, in which case the puncture is made in the situation of the lateral operation of lithotomy. After cutting through the integuments and adipose substance, a trocar may be passed upwards and forwards, so as to perforate the bladder about its neck; or after cutting into the perineum, you may make an opening into the membranous portion of the urethra, behind the bulb, where it is distended; and and in other cases you may force an opening into some other part. It appears to me that the opening above the pubis into the bladder is the simplest and most convenient. If the prostate gland were enlarged, you could not puncture through the rectum, for it would prevent your getting into the bladder in the direction you wished.

Ulceration of the Urethra.—It sometimes happens before effective means have been taken to relieve the patient from retention of urine, either by introducing an instrument through the urethra, or by puncturing the bladder, that the bladder becomes evacuated in another way, that is, the *urethra ulcerates* behind the stricture, or sloughs so that the urine escapes, through the opening thus made, into the cellular membrane surrounding the canal; the urine in fact becomes *extravasated*, and when it passes in this way out of the urethra into the cellular membrane, the continued and repeated urgent efforts of the inflamed bladder to rid itself of its contents, forcibly inject the fluid into the cellular membrane, and propel it from one part to another, until at last it is carried through the cellular membrane to a very considerable distance from the seat of its original admission. In the first place, the cellular membrane about the anus, scrotum, and penis, becomes filled with urine, and enormous swelling of those parts is the consequence; the urine then passes into the cellular membrane of the lower part of the abdomen, of the inside of the thighs and groins, and the irritating fluid thus injected into the cellular membrane in this extensive way, produces a high degree of inflammation, attended with suppuration and mortification of that structure; and when suppuration and mortification of the cellular texture are produced to a considerable extent, mortification of the integuments covering it necessarily follows. This local mischief is attended by a high degree of inflammatory febrile disturbance, and the patient is brought into a state of the most serious danger; in fact, the con-

stitutional disturbance produced by this extensive inflammation of the cellular texture, quickly brings the patient into the greatest danger.

Treatment.—All that we can do in these cases, is to give a speedy and effective exit to the urine; to cut down through the integuments and cellular membrane in the perineum, to the part at which the urethra has given way, and thus to allow of a ready and direct exit for the urine; also to make incisions in other situations to which the extravasation of the urine has extended, so as to allow the escape of the fluid from the different parts where it has been injected, into that membrane, and at the same time to allow of the ready escape of the matter, and of the sloughs of the cellular membrane. The ordinary situation of stricture being in the membranous part of the urethra, you would in the first instance, unless there should be any particular circumstance prohibiting it, cut down through the perineum, in the situation in which you would cut for the lateral operation in lithotomy, and cut as nearly as possible into the membranous part of the urethra; this allows the urine to escape, and affords a ready and free exit for any that may afterwards be secreted. But the mere making of such an opening is not sufficient, for in bad cases the scrotum, penis, inside of the thighs, the groins, and the cellular membrane of the abdomen, become externally injected with the urine; it is necessary therefore, in those cases, to make further incisions to let out the urine which has gained admission into those parts. Very great relief is produced when the urine is thus evacuated, and the patient, from a situation of the most urgent danger, becomes in fact so relieved, that you hardly think he is in any danger at all. Extensive mortification of the cellular membrane, and of the integuments, often, however, occurs for all those portions, with which the urine comes in contact, perish; you have large sloughing taking place in the scrotum and penis, and the testicles are often completely denuded; but still, if the patient is effectually relieved, you find that this extensive destruction is repaired, and that the patient recovers after passing through a state which you would suppose necessarily to be fatal. I do not know any more remarkable recoveries, from apparently desperate situations, than those which take place under circumstances such as I have now mentioned to you.

LECTURE LXXVIII.

Urinary Organs, continued.—Laceration of the Male Urethra; Fistula in Perineo; Treatment.—Retention of Urine; Treatment.—Inflammation of the Prostate; Treatment.—Scirrhous Enlargement of the Prostate; Treatment.—Calculi in the Prostate; Treatment.—Rupture of the Bladder; Treatment.—Bursting of the Bladder; Inflammation of the Bladder; Treatment. — Incontinence of Urine; Treatment.—Affections about the Female Urethra.

Laceration of the Urethra by External Violence.—When the urethra is lacerated in consequence of external violence, as by a fall on the perineum, *effusion of urine* takes place into the surrounding cellular membrane, and the same kind of effects ensue, though perhaps in a less degree, as when the urethra ulcerates behind a stricture. Of course, the same kind of measures must be adopted to remedy the mischief; that is, you must cut down in the perineum to the place where the urethra has been wounded, and thus you will provide a direct exit for the urine, and prevent its further injection into the cellular membrane. In consequence of the extravasation of urine, either from ulceration of the urethra behind a stricture, or from a wound in the canal, or the formation of an abscess in the neighbourhood of the urethra communicating with it, it sometimes happens that, after the primary effects of the mischief have passed away, an opening remains in the perineum or scrotum, or some part of the neighbourhood of the urethra, through which some portion of the urine is habitually discharged—a permanent fistulous aperture giving issue to a little purulent matter and more or less urine; this is called

Fistula in Perineo,—the more common situation of these fistulous openings being in the perineum. The circumstance which gives rise to the occurrence of fistulæ in perineo, is, in the first instance, a serious obstacle to the evacuation of the urine by its natural course—either stricture or laceration of the canal by violence. The inflammation and various effects which follow this occurrence provide a new and artificial opening for the discharge of the urine, which will continue to pass through it as long as the impediment to its direct exit through the channel remains.

Treatment.—The first object, therefore, for the relief of a patient from the inconvenience of fistula in perineo, is to remove the impediment which opposes the unnatural discharge of the urine, and to endeavour to bring the whole of the urethra into its natural state, and to its full dimensions; if you accomplish this, the fistulous opening closes of itself; for instance, if you make an opening into the urethra, when it is of its full dimensions, to remove a calculus from the canal, you do not find that a fistulous opening remains afterwards, for there is a free passage to the urine; no obstruction exists in the natural passage, the aperture

you have made closes up in the same way that any other wound would do, and you restore the natural state of the urethra. Though you will frequently find that fistulous apertures in the same way become closed; yet it has happened, in some instances, although the urethra has been apparently effectually enlarged, that the fistulous aperture is not closed in the way desired; and, under such circumstances, it is perhaps difficult to point out any mode of treatment by which you can depend on closing it. Sir Astley Cooper has recommended a simple operation which may be tried, but which I have not seen practised; it consists in detaching a flap from the integuments, so as to cut through the fistulous aperture, and then laying the flap down again. Suppose this tube should represent the fistulous opening, the mode of proceeding is to make two lateral incisions, one running on each side of the aperture, and to join those by a transverse incision towards the anterior part of the penis; then dissect the flap down to its base, and by so doing you cut through the fistula, or the unnatural canal; then lap down the flap in its place again. You can readily suppose that the divided sides of the fistula will unite, and there is a reasonable prospect that the opening will become obliterated. I have not seen this operation performed, but it is a simple proceeding, and may deserve a trial.

In instances in which the cellular and adipose membranes surrounding the urethra—that is, of the perineum and scrotum—have become thickened and hardened, and where numerous fistulous apertures exist, partly communicating with each other, the best mode of proceeding is to lay open those apertures, when we shall probably find that there will be only one aperture communicating with the urethra. Introduce a probe or director, slit up the fistulous openings, and, as far as you can, lay them into one. This step must necessarily precede the adoption of any other measures you may have recourse to in such cases. If you have either to cut down through the perineum into the urethra, or to divide the stricture with the lancet in the stylet employed by Mr. Stafford, or by the forcible introduction of a small bougie, or any means of that kind, you will find great advantage from the previous free division of the fistulous openings; you will find that the division of these openings will lead to considerable reduction of the swelling, and to consequent diminution of the induration that has formed in the situations I have mentioned to you.

Retention of Urine may occur from other causes affecting the urethra; that is, you may have active inflammation occurring in the immediate neighbourhood of the canal, inflammation of a phlegmonous character, followed by abscess; and this will cause difficulty in passing the water, and perhaps temporary retention of urine. Extravasation of blood, in consequence of a bruise or injury, may press upon the urethra, and cause difficulty in expelling the urine, although the urethra may not actually be lacerated. You are not to suppose, therefore, that, in every case where violence has been inflicted, and where there has been difficulty experienced in voiding the urine, that the urethra is necessarily torn. In many cases there may be simple ecchymosis creating difficulty, and you may find that you are able to introduce a catheter, and thus relieve the patient.

Retention of urine may arise from calculi entering the urethra, and not passing along the whole of the canal; for a calculus may be stopped in some particular part of the passage. Foreign bodies may be introduced into the urethra, and thus produce difficulty in voiding the urine, or even actual retention.

Treatment.—Under such circumstances, the extraction of the calculus or foreign body, or its removal from the urethra by excision, is all that is required.

Inflammation of the Prostate.—The prostate gland is liable to inflammation, which may be either of the acute or chronic kind. In acute inflammation of the prostate, there is considerable pain in the situation of the gland, pain which is referred by the sensations of the patient to the neck of the bladder or perineum; pain accompanied by a sense of heat and weight in those parts, and aggravated when the urine is voided, or when the bowels are evacuated; for the prostate lies so nearly in contact with the rectum, that the passage of the fæces through it exerts a pressure on that part, sufficient to produce considerable pain, when the gland is in a state of inflammation. The near neighbourhood of the prostate to the neck of the bladder, the immediate continuation of the mucous surface lining the urethra within the prostate, with the mucous coat of the bladder, render it very probable that the bladder may participate in the inflammation; and then you will also have the symptoms which I have mentioned as characterising inflammation of the bladder, such as a constant urgent desire to evacuate the urine. You cannot be under much uncertainty as to whether the prostate is inflamed or not, because you can gain clear information on the subject, by introducing your finger into the rectum. The prostate lies on the upper and anterior part of the rectum, connected with it only by a little loose cellular membrane, and thus, when you introduce the finger into the rectum, you can distinctly ascertain the

outline of the prostate; ascertain whether it is enlarged, whether it is preternaturally sensible on pressure, and that will enable you to decide whether it is in a state of inflammation or not.

Treatment.—When the existence of inflammation is ascertained by the circumstances I have mentioned, you must adopt an antiphlogistic treatment; general or local bleeding, according to the strength of the patient and urgency of the case; give diluent and mucilaginous drinks; endeavour to reduce the inflammation of the gland in the same way in which you would combat inflammation of any other part of the body. The difficulty of voiding the water, in consequence of the swelled state of the prostate, constitutes a very prominent part of the symptoms under which the patient labours. The mechanical difficulty which this swelling opposes, occasions the patient to make water with considerable pain, and prevents him from evacuating the bladder without considerable force and straining (particularly at the commencement of the act of voiding the urine), diminishes the size of the stream, reduces the evacuation of the urine to the simple expulsion of it by successive drops, and, in fact, if it go on to a certain extent, may cause even complete retention. In those cases you should avoid, if possible, the introduction of the catheter. Here is a pretty actively inflamed substance, against which, in its introduction, the point of the catheter will necessarily come, and through which it must pass in order to enter the bladder. The introduction of an instrument, under such circumstances, must be expected to aggravate the sufferings of the patient at the time, and therefore, if you can put a stop to the inflammation, and enable him to make water without the employment of an instrument at all, it will be very desirable for you so to do. Trust, therefore, to antiphlogistic means, with which fomentations, the use of the hip or warm bath, may be combined; and do not have recourse to the use of an instrument, unless these means fail, and there should be an actual necessity for relieving the patient from the danger which the difficulty of evacuating the urine produces. If you come then to the introduction of an instrument, you should be aware of the particular change in the urethra, which the swelled state of the prostate produces. The swelled prostate does not diminish the dimensions of the urethra, but it alters the course and shape of the canal in that part which goes through the gland; it presses the sides of the urethra together, and the swelling of the prostate, the principal part of which is situated below the urethra, that is, between the urethra and rectum, pushes the urethra up towards the pubis; at the same time, the enlargement of the prostate in size, an enlargement which takes place in all directions, increases the length of this part of the canal. The changes then produced are, first, an elevation of the urethra pushed upwards towards the pubis, an elongation of the canal in its prostate portion, and a pressing together of the sides of it laterally. The best instrument in this case is a large elastic catheter; and indeed I should observe to you, whether you employ an elastic or a silver catheter in cases of enlarged prostate, you will always find it necessary to use an instrument of *full size*—an instrument such as I have got here, which is of the full dimensions of the healthy urethra, and which will pass on much more easily than instruments of a smaller size. The best instrument, then, as I have just mentioned, is the catheter made of elastic gum; and you should use those instruments which are made so as to retain their curved shape without a stylet. The ordinary gum catheters are made straight, so that, after you introduce one of them, if you take out the curved stylet, it becomes straight; but by Mr. Weiss (and probably by others), elastic gum catheters are fabricated which retain the curve without the stylet, so that you can introduce a catheter of that kind in a case of inflamed prostate, and it will be found to retain its curve. If this can be done (there being no hard substance in it), the purpose will be accomplished with less pain to the patient, and less irritation to the inflamed part, than the introduction of an instrument which is not flexible would occasion. If, however, you should fail in introducing such an instrument, you must have recourse to the silver catheter; and here you may employ an instrument with a similar curve to that which I have described to you, except that the extremity of the instrument should be prolonged, so as to represent more than the quarter of a circle. The curved part of an ordinary catheter, or staff, or sound, may form the quarter of a circle four inches in diameter; but in cases of chronic inflammation of the prostate gland, you should have the curve prolonged a third or a quarter of an inch over that, and it should be such as to enable the end of the instrument to rise over the elevated part of the urethra. This is an instrument of full size, where the prolongation of the curve is carried out to the full extent to which it is necessary to have it; it is not necessary for it always to have this extent; but this sort of catheter, which is about fourteen inches in length, you will sometimes find necessary where the prostate is enlarged. I have employed it several times with great ease and perfect success.

Scirrhous Enlargement of the Prostate.—Inflammation of the prostate gland is not an affection observed in young persons it

is mostly met with in persons at or after the middle period of life, more especially in those advancing in years. Chronic inflammation and consequent slow enlargement of the prostate, is a more common affection than acute inflammation of the gland. The prostate slowly acquires a considerable augmentation in bulk, at the same time that it becomes firmer and more compact in its texture; and this is the change which has commonly been denominated *scirrhus* of the prostate gland. When you hear this word you are not to understand, that the prostate undergoes a change similar to that which constitutes scirrhus, in the strict sense in which we now employ the term; it does not undergo any change of a malignant character—the term is here employed only to denote the firmness and hardness which the prostate acquires. Now this which I show you is an example of scirrhus of the prostate, where, as you will see, it has acquired the size of my fist, and where, on making a section of it, it is found to consist of a dense, thick, compact, and almost homogeneous structure; and it forms certainly an immense tumour intervening between the bladder and rectum. This is another specimen of enlargement of the prostate gland, which is very much thickened, and you may easily conceive what the difficulties must have been to the evacuation of the urine with this great mass, which is as large as a middle-sized orange, in such a situation.

In these cases which I have now pointed out to you, you observe the prostate enlarges in its whole substance, in all directions, and you see the tumour which it forms lies principally below the urethra, because, in the natural state, the chief bulk of the prostate is situated between the urethra and the rectum. Now, in some cases we find that the prostate enlarges more particularly just under the opening by which the urethra proceeds from the bladder; the portion which forms the inferior boundary of the opening of the urethra, is the seat of enlargement; it rises up into the neck of the bladder in the form of a valve-like prominence. This part has been called by Sir E. Home the *third lobe* of the prostate gland. We find that the prostate consists of two large lateral divisions which are not absolutely distinct from each other, being completely united below; however, they are called the *two lateral lobes*, and the prominence which projects just below the orifice of the urethra where it enters into the bladder is called by Sir E. Home the third lobe. In cases where the prostate generally is enlarged, it frequently happens that this particular portion, which constitutes the inferior boundary of the orifice of the urethra, is more enlarged than the rest; and in some cases where the lateral lobes of the gland are not much altered in size, this middle lobe, as it is called, becomes considerably augmented in bulk. Here are several specimens to show this. Here is an enlargement of the middle lobe, which has been perforated by the introduction of a catheter; the two lateral lobes being also increased in size. Here is another enlargement of the third lobe, where the two lateral lobes seem to be nearly in the natural state. Here is another where the third lobe is as large as a walnut, projecting into the bladder, and forming a regular lobular protrusion into it. Here is another specimen of the same kind. Here is another variety where it forms a sort of fungous protuberance, so that there is a small valve-like fold produced by it: you see, therefore, that this kind of enlargement is by no means uncommon.

This chronic inflammation, and slow enlargement of the prostate, constituting, as it is called, a scirrhous state of the gland, often comes on insensibly, without any inconvenience that attracts the attention of the patient; it proceeds to a very considerable degree without apparently exciting any symptoms sufficiently marked to induce him to complain, and, in fact, he does not make any complaint until the size of the prostate generally, or until the enlargement of the third lobe, produces such difficulty in the evacuation of the urine, as to force him to seek for assistance. The patient, in the first instance, finds that he does not void his water so easily as before; he finds it necessary to make a more powerful effort at the commencement of the act; he is obliged to strain and to exert himself more considerably, though when that difficulty is once overcome, the contents of the bladder will flow out easily enough. In proportion as the enlargement increases, this difficulty also increases; after some time the urine comes off only in a small stream, perhaps by drops, and possibly complete retention may occur. This enlargement of the third lobe of the prostate produces a peculiar mechanical obstacle to the evacuation of urine, for the enlarged portion rising up in the lower part of the bladder when the patient exerts considerable force to expel the urine, presses against the orifice of the urethra, and thus acts like a *valve*, and prevents the complete evacuation of the urine. A portion of the contents of the bladder may be expelled with great force, but a certain part of its contents always remains behind; and thus, although the patient makes water, he does not empty the bladder completely; and a degree of retention of urine is established. Hence it happens, that although the patient passes a little urine, the desire to make water immediately returns; of this state of things you gain a knowledge by introducing

a catheter after the patient has made water; let him empty the bladder as much as he can, and then introduce a catheter, and if you find as you do that several ounces, half a pint, or a pint of water flows off, you then ascertain that the bladder does not completely empty itself, that there is a certain portion of the contents remaining, and that this is the cause of the continued urgency to make water, and the inconvenience which the patient experiences.

Treatment.—In the case of this chronic enlargement of the prostate, we have not much power of relieving the patient by producing any great reduction of the affected part. I have mentioned to you that the enlargement of the part is not of a scirrhous or cancerous nature, as the name would lead you to infer; yet, although it is not of a malignant kind, we seldom find that we can reduce its size. By attention, however, to diet, careful attention to the state of the stomach and bowels, by a course of mild, alterative, and aperient medicines, we can keep the patient, perhaps, in a tolerably healthy state. Attempts have been made, sometimes, to reduce this enlargement by seton or issue, in the perineum or upper part of the thigh, but it is an inconvenient course of proceeding, and one to which patients are not inclined to submit. This is a complaint which you find taking place in persons advancing in years; you do not find it in young persons. I have certainly seen a very few cases of it in young persons, but the great majority of those you have to treat for this complaint, are past the middle period of life.

When the affection of the prostate has gone the length of producing the serious obstruction to the evacuation of the urine which I have mentioned, this of course requires the assistance of the surgeon. You should employ the catheter in order to get rid of the contents of the bladder, and to get the bladder into such a state as to enable it completely to expel the quantity of urine it may contain. And in instances where the bladder does not evacuate its contents completely, where there is a constant accumulation of urine within it, which you detect in the manner I have described, the course you have to pursue is, to introduce the catheter regularly once or twice in the four-and-twenty hours, so as to draw off the stale urine, and to give the bladder the opportunity of recovering its power of contraction; and after following this up for some time, perhaps two or three weeks, you generally find that the evil is removed, and that the patient recovers the power of completely emptying his bladder. In this chronic condition of enlargement of the prostate, you find it, perhaps, still more necessary than in a case of acute inflammation of the prostate, to attend to those changes in the direction and length of the canal which I have already pointed out, and to use an instrument of the particular configuration I have described. It is necessary that the catheter should be longer than that which is employed under ordinary circumstances; give it the length, perhaps, of fourteen inches, curved as I have stated, and always use a catheter of full size. It has happened to me, repeatedly, to be called in in cases of difficulty in making water, caused by an enlarged state of the prostate, and where those who have previously seen the patients, in consequence of attempting to introduce instruments of small size, have not been able to get off the water, where they have found a difficulty which they supposed to proceed from stricture; and in such cases, when the smallest catheter could not be introduced, I have repeatedly succeeded in introducing an instrument of this size with the greatest ease. It is of great importance, therefore, in cases of this kind, that you should be provided with instruments which in point of size and configuration are adapted to the particular states I have described. You can easily suppose the state of mind of a patient who has not made water for some time, the great feeling of distress which he experiences, and how grateful he is to a person, who, without giving him any pain, is able effectually to relieve him at once from that indescribable state of distress.

Calculi in the Prostate.—The prostate gland is subject to the accumulation of *calculi* in it; that is, peculiar calculous concretions form in the prostate, and are disseminated throughout its substance. There are two specimens of this kind.

Treatment.—These cases are seldom the subject of surgical treatment. When calculi of this kind form in the prostate, they escape after a certain time into the urethra, and are voided with the urine. They sometimes produce uneasiness, but seldom except when passing through the urethra. These calculi are sometimes felt in the introduction of an instrument through the prostate; but they do not produce the inconvenience attending calculi in the bladder. We have little, if any, means to use for their removal, and I merely mention the subject to you, that you may be aware of the possibility of the existence of calculi in that situation.

Rupture of the Bladder.—The bladder is sometimes ruptured, in consequence of external violence, particularly in *pugilistic* contests. When persons are engaged in these contests, they endeavour to hurt each other in every possible way as much as they can; and it happens, I believe, (at all events, in some parts of the country,) to fall within the *honourable* rules applying to that

calling, that if one throws the other on the ground, he may come upon him with his knees sunk into the abdomen. Now, these contests sometimes take place when people have been drinking—are half tipsy, and have their bladders pretty much distended, and when they do take place under these circumstances, it has not very uncommonly happened, that rupture of the bladder has been produced; the urine then escapes into the abdomen, and most violent inflammation ensues, which terminates fatally in a very short time.

Treatment.—In a case of that kind, if we should see the patient soon after the occurrence of the injury, and the circumstance should enable us to ascertain what has taken place, all we can do to afford relief is to introduce a catheter into the bladder, and to leave it there to let the urine flow off in that way, so that it may not pass into the cavity of the abdomen; but I am not aware of any case, where this accident has happened, in which the patient has recovered.

Bursting of the Bladder.—The bladder, when extensively distended, may burst; now, when we speak of the bursting of the bladder, we do not exactly mean that it bursts in the same manner as the bladder would burst in the dead subject, if it were excessively distended; for you would find that a bladder, if it is excessively distended and gives way, will probably do so by *sloughing*, as an aneurismal tumour does when its coverings are rendered very thin. This is, however, a rare termination of excessive distention of the bladder; it is much more common to have inflammation and ulceration of the urethra behind the stricture taking place, and then that course of things which I have already had occasion to describe.

Inflammation of the Bladder.—The bladder may be the seat of inflammation; the mucous membrane of the bladder may be inflamed, and such an occurrence I have already described in speaking of gonorrhœa. The mucous membrane, however, of the bladder may be inflamed under other circumstances—in consequence of inflammation of the urethra, or violence offered to the urethra. Inflammation of the bladder is attended by violent pain in the lower and anterior part of the abdomen, with an incessant desire to evacuate the urine, and with mucous, purulent, or bloody discharge mixed with it, the mucous discharge when it exists, generally being of a peculiarly thick ropy kind, which separates from the urine, subsides to the bottom, and adheres firmly to the vessel in which the urine is contained, so that, when you pour off the water, you have a thick viscid mucous substance, almost as thick as bird-lime, adhering to the bottom of the utensil.

Treatment.—An antiphlogistic treatment in the active stage, subsequently narcotics, either in the form of glyster or suppository, with diluent and mucilaginous drinks, are the means you are to employ in inflammation of the bladder.

Incontinence of Urine.—Incontinence of urine arises in consequence of inflammation of the bladder; that is, in the inflamed state the bladder perhaps can hardly bear the presence of even the smallest quantity of water, so that there is an incessant desire to expel the urine immediately on its being secreted, and this is called *incontinence of urine*. This affection, however, sometimes takes place under circumstances where the immediate cause of it is not quite so obvious. It is by no means uncommon in young subjects, in children, occurring in them particularly in the night; they hold their water very well during the day-time, but when they go to bed, the contents of the bladder escape insensibly during their sleep—they wet the bed. This often goes on to a very considerable length, and children are punished for it. An idea is entertained that they will not evacuate the contents of the bladder in the proper way, from negligence or carelessness: however, there are several instances in which we cannot refer it to that cause; and in the majority of cases, if not in all, it is to be referred to disease, and does not depend on the will of the patient. It should seem that, in these instances, there may be a condition of the bladder something like that of chronic or slight inflammation, so that it is excited by the presence of urine in a greater degree than it ordinarily is; insomuch that the contraction of the bladder, which in the natural state is a kind of half-involuntary motion, takes place more readily than under ordinary circumstances; the bladder contracts, and the urine is evacuated without awaking the patient.

Treatment.—In these cases our first object is to take care that the stomach and bowels shall be kept in a proper state, to regulate the diet and the patient's general mode of living, and by doing this, we, in a great majority of instances, put a stop to the affection, but not in all. If we find further measures necessary, we employ in succession the warm bath, the tepid bath, and the cold bath; and if these fail, we may then have recourse to what seldom will fail, the application of a blister to the lower and anterior part of the abdomen in the neighbourhood of the bladder.

Incontinence of urine may sometimes, perhaps, arise from mechanical causes; a calculus for instance in the bladder may be so lodged in relation to the orifice of the urethra, as to close up a portion of it, and leave the rest open for the continued escape of the urine.

Retention of urine frequently takes place in consequence of particular states of the bladder. It will be produced, in the first instance, from a complete interruption or diminution of the nervous influence, as in the case of serious injury to the spinal chord, from fracture of the spinal column, or concussion of the chord. The contractile power of the muscular coat is lost; under such circumstances the patient has not the power of emptying the bladder, and we are obliged to relieve him with the catheter. Probably a somewhat analogous case, that is, either an interrupted or diminished influence of that part of the centre of the nervous system with which the nerves of the bladder are connected, produces the retention of urine which takes place in the last stage of typhus. The bladder then becomes distended, and we should relieve it in the usual way, not that it is very necessary as to the result of the case, but it would not be very creditable to us as practitioners, to allow that retention of urine to continue. Retention of urine frequently occurs, particularly in old persons, from an over-distended state of bladder, brought on by neglecting to expel the urine when it has accumulated, so that the muscular coat of the bladder loses its power. In elderly persons the sensibility of the bladder seems to be diminished, so that they do not feel the necessity of voiding the urine so much as young persons do. Then, again, a person not being conveniently situated for emptying his bladder, neglects the first call, allows it to become distended, the desire perhaps goes off, a large quantity of water accumulates, and the bladder rises up to the umbilicus, or even higher; and when the patient is in a convenient place, and attempts to empty it, he finds that he is totally unable to do so, and that he cannot void any water at all. We introduce a full-sized catheter, and let off a large quantity, some pints perhaps; the bladder becomes distended again, and the patient is not able to evacuate its contents by the natural efforts, therefore we must go on introducing the catheter at short intervals to prevent the distention, and that gives an opportunity to the bladder to recover its natural contractile powers; and sometimes several weeks may pass in this way. In such instances we may sometimes, if we do not pay attention to all the circumstances, be misled by this fact, that when the distention has gone on to a certain extent, the resistance which the neck of the bladder naturally affords to the escape of the urine is overcome, it gives way, and the water flows out of itself, and thus incontinence of urine is joined to the retention of it. You have, therefore, got apparently two opposite states in the same individual; the bladder is excessively full, the patient cannot evacuate its contents, and yet the water involuntarily flows off in small quantities through the urethra. In the natural state the contraction of the sphincter of the bladder counterbalances the force which can be exerted by its muscular coat, so that, when we are going to evacuate the water, we are obliged to call in the assistance of the abdominal muscles; and when the muscular contraction of the bladder becomes greater than the resistance which the sphincter offers to it, then the urine passes through the orifice of the urethra; and after the patient is relieved, it produces a renewal of this involuntary flow. In the case, therefore, of an old person who may complain of not being able to hold his water, and when you come and find the water flowing off involuntarily, do not give any opinion about it, till after you have, at all events, laid your hand upon the abdomen, and felt whether the bladder is distended or not; for very serious consequences may be produced by a mistake of this kind. It happened to me, a good while ago, to be sent for to see a gentleman labouring under an affection of the bladder; and the medical attendant, who had lately seen him, mentioned that the case was one of great irritability of the bladder, that it would hold no water at all, the urine passing off as fast as it came into it. He said he had been doing all he could to get the natural power of retention of the bladder restored; he directed the patient to drink diluent fluids—in short, he had done all he could to prevent it, but yet the water ran off. It appeared to be a singular case; I put my hand under the cloths upon the abdomen, and I felt the fundus of the bladder forced up a good way above the umbilicus. I said I had brought a catheter with me, and that I might just as well introduce it, to see if there was any thing in the bladder. I introduced it, and about *five pints* of urine immediately flowed off. The fact was, that the bladder had been allowed to be distended in this way about five days before I saw him, and the consequence was, that that gentleman never recovered the natural power of emptying the bladder afterwards, but he, after a certain time, acquired the art of introducing the catheter, which he still employs; he can introduce and let off the water whenever he finds a desire to do so, but he never has been able to empty the bladder by the natural powers since. It is of great importance, therefore, to introduce the catheter in cases where the bladder has been over-distended, and to continue that introduction, so as to enable the muscular coat of the bladder to recover its natural contractile power, in order to prevent patients from being reduced to the very serious and unpleasant state of not being able

to relieve themselves by their own natural efforts.

Affections of the Female Urethra.—The female sex are, in one respect, much more fortunate than we are; they have an urethra of only about *an inch* in length, and thus they escape all the various ills which we suffer from strictures, and their various pernicious consequences. Luckily, also, gonorrhœa attacks them in another organ, so that, so far as the urethra is concerned, they do not suffer any of the ills which gonorrhœa entails on the male sex. Females are hardly subject to retention of urine in the same sense in which it affects the male; their urethra is so short and so large that there is never any difficulty in the passage of the urine through it. If we are obliged to have recourse to the use of the catheter, it is under circumstances in which we can introduce it with great ease. Except in some cases, where difficulty in expelling the contents of the bladder, in consequence of particular states, or rather changes of position of the uterus—*retroversion* of the uterus for instance (a point which is considered in midwifery, and which, therefore, I need not enter upon),—we are seldom if ever called upon to introduce the catheter. But females go sometimes too long, and neglect to allow the water to flow off at the proper time, and thus retention may occur. This, which I show you, is a female catheter; it is a short silver instrument slightly curved. It is not necessary to expose a female patient, in order to introduce the catheter; you insert the finger between the labia, feel the clitoris, carry the left fore-finger on just by the superior margin of the vagina, and then you carry the point of the catheter gently along that finger with the other hand, and just by feeling about a little with the point of the instrument, you can easily introduce it into the urethra under the bedclothes, and allow the water to run off without exposing the female at all.

I hardly know any kind of disease to which the female urethra is exposed, except one, which is very painful, causing great suffering, although the disease does not appear to be by any means formidable; it is the development of a peculiar vascular excrescence just about the orifice of the urethra, inconsiderable in point of size, but characterised by the light-scarlet colour it exhibits, as if it were filled with blood, and as if the blood were of the florid arterial kind. It is attended with excessive pain; the ordinary movements of the parts on taking exercise, the friction of dress, the approach of any *foreign* substance—I mean such as a catheter, or any thing that we employ—produce the most exquisite pain, and very great suffering, therefore, almost constantly attends this complaint, which, fortunately, is rather rare. In the instances I have seen, I have attempted to dissect it away; this is very painful, but it is the most effectual mode of proceeding. Perhaps, if the excrescence be such as to admit of your cutting away the whole, you had better do so, or you may destroy it by strong escharotics, such as the nitrate of silver, or potassa fusa, in substance.

Lecture LXXIX.

Trepanning.—Opening of the Lachrymal Sac.—Hare-lip.—Removal of Tumours.—Tying of the Brachial Artery.

Until lately, I was not exactly aware of the great difficulty which exists in procuring the *raw* material for some part of our studies. I have been endeavouring for several weeks to obtain the means of showing you the surgical operations on the subject, and I have waited in vain for what I wanted; but as the course and the season altogether are now coming so near to a close, it is necessary that we should be content with what we can get, without being very nice on the subject. I am indebted to some gentlemen for allowing me (as far as they had the means) the opportunity of showing you this evening on the subject, some of the *operations of surgery*, and the first of those which I shall show you, is one that can be demonstrated as well on this subject as on any other—the operation of

Trepanning.—Here, indeed, as you will easily understand it, is a very simple sort of business—to *bore a hole* in a person's skull with a saw, which, in fact, is the object of trephining. We generally undertake the operation for the purpose of elevating a portion of depressed bone, or it may be undertaken where there is no bone depressed, and where the surface of the skull is entire, in order to give issue to blood or matter supposed to be effused under the skull at a particular point. In the case of fracture of the skull with depression, where we deem it necessary, on account of existing symptoms, to elevate the depressed portion of the bone, it is not necessary that we should perform that operation which is technically called trepanning or trephining. If there be a fissure of some length in the skull, and if one side of the broken portion be beaten in under the other, it does not necessarily follow that we should take out a circular portion of bone to elevate the depressed edge. It is only necessary that we should just saw off a thin part of one edge of the bone, and we shall then be able to introduce an elevator to raise the depressed part to its proper level. Sometimes, without making any opening in the skull, or removing any part of it, we can use this elevator, which is an instrument roughened on one edge, so as to enable us

to raise the depressed bone. But suppose we cannot use the elevator, we may find it sufficient with a small saw—with Hey's saw (so called from the name of the inventor, the late Mr. Hey, of Leeds), to cut off any portion of the upper part of the bone which prevents our elevating the depressed piece. With one edge of the saw we can cut off any such part, and with the opposite edge (which is of a semicircular form) we can make a cut a little curved—we can cut off a curved line with this; so that the use of Hey's saw very often enables us to elevate a depressed bone sufficiently, without taking away so much of the skull as would be necessary if we applied the trephine.

The trephine consists of a circular saw, which is worked by a handle. In the first place, we make an opening by means of the instrument called the *perforator*; this makes an aperture in a certain point of the skull, which receives what is called the *centre-pin* of the trephine. This central portion of the trephine can be removed or attached to the trephine at pleasure; we can take it out, and then the trephine consists of a simple circular saw. But if you were to attempt to saw out a piece of the skull with this circular part of the saw simply, it would be very difficult to make a groove, and you could not saw out the portion; the centre-pin enables you to fix the circular saw until you can get to a certain depth with the groove, and then you can take it out with this key. It will generally happen, in cases where it is necessary to trephine, that there is already a wound through the soft parts, by which the bone is exposed, and, therefore, all you have to do, perhaps, is to enlarge that wound, to extend it, and to turn aside the scalp, so as to expose the bone in a particular situation for the application of the saw or trephine. If there be no wound, I conclude you would not think of doing what was heretofore practised, that of cutting away, I suppose, a circular portion of the soft parts and removing them! that was the old way of going to work. You are of course aware, that although the integuments may be divided and detached to a considerable extent, if they are laid down again, the divided scalp will unite, and the integuments will close the vacancy that is left by the removal of a portion of the bone. In the first instance, then, we shall proceed to make the wound in the head. [*The Lecturer proceeded to show the different steps of the various operations described in this Lecture, making the following observations as he went on.*]

You leave the portion of scalp, merely turning it back; you do not find it necessary to cut it off. Then with this perforator you make an opening, which will receive the centre-pin of the trephine. It seems to be quite a mechanical business; it appears to be more the business of a carpenter than of a surgeon. Then you take out the perforator, and you put into the handle of the trephine its centre-pin; the centre-pin fits into the opening you have already made in the skull, and that keeps the trephine in its place—prevents it from deviating. Now you may saw away as fast as you please, until you get it pretty nearly through; you do not run the risk of doing any mischief. Now after you have sawn in to a certain extent, it is expedient to remove the centre-pin of the trephine, for it projects a little beyond it, and if you were not to remove it, you would perforate the skull and dura mater before the circular saw had gone through the bone. Having made the groove of a certain depth, you can then carry it on without the centre-pin. The teeth of the trephine are set in such a way, that it makes a groove of some size; it does not merely make a simple opening, as you will observe, but it destroys the bone to some extent. Now when we begin to think we have probably sawn nearly through, it is necessary to examine the bottom of the groove all round with a probe, in order that we may not wound the dura mater at any part. The object of the operation is to remove a portion of the skull simply, and to avoid wounding the dura mater. You just blow out the sawdust, and feel all round. At present I feel the bottom all the way round, so that I ascertain I have not got through it at any part. Try again: now you may find that you have sawn through at one point, and not at another; in that case you can bear on that part you have not got through, and not all round circularly. Now I just bear upon the lower part of the circle; but when you have got through one part, you must proceed very cautiously, because of course you may expect the skull is very thin in the rest of the groove, and, in general, it will be safer for you to try with the elevator at the time that you have got through at one point, to see if you can break off the portion of bone which is not sawn through. I find, that with the elevator in this instance, I have broken through a part which has not been sawn through entirely, without any injury to the dura mater. Now this is the operation of trephining, and you will observe that the mechanical performance of the operation is a thing much less difficult than the appreciation of the circumstances that may require it, or the balancing of the considerations for and against it.

Opening into the Lachrymal Sac.—I have already mentioned to you the circumstances under which it may be necessary to make an opening into the lachrymal sac, in order to enable you to clear away any obstruction in the nasal duct; and all I have to

show you at present is, the situation and manner in which the opening is to be made in that case. The bony cavity in which the lachrymal sac is lodged, is situated exactly at the inner angle of the eye, nearly opposite to the junction of the two palpebræ, towards the nose, one portion of the sac being situated above the junction of the palpebræ, but the greater part below it. The probe which I now pass goes through the lachrymal sac into the duct and into the nose, and it goes pretty nearly in a perpendicular line from the superciliary ridge, near to the junction of the palpebræ. Opposite the commissure of the two palpebræ there is a small elevation, the tendon of the orbicularis palpebrarum, which is attached at the point upon which I now place the knife, to the nasal process of the superior maxillary bone; about one-third of the sac is above the tendon and two-thirds below it; but the tendon itself, and the fibres of the orbicularis palpebrarum immediately connected with it, lie in close contact with the mucous membrane that lines the sac. The rule, therefore, to be observed for the performance of the operation of opening the lachrymal sac is this—you see the elevation under the skin produced by the tendon of the orbicularis palpebrarum, or if you should not absolutely see that, just drawing in your mind a line from the junction of the palpebræ to the side of the nose, carry a straight, sharp-pointed, double-edged bistoury (the point of which you place immediately below the tendon) down to the bone, and then you will inevitably make an opening into the lachrymal sac. In a case which requires this operation, the performance of it is rendered easy by this circumstance, that there is an accumulation of tears, or purulent matter, causing a tumour at the internal angle of the eye, and that tumour is the point at which the knife is to be plunged into the sac; it goes just below the line of junction of the two palpebræ. Now you will find that the probe will pass in at this aperture. You see that the probe passes not quite perpendicularly downwards, but with a little inclination backwards, and you may easily see that it enters the nose by attending to the depth to which it passes; it goes in about an inch and a half, and nothing can be more simple than this operation.

Hare-lip.—I shall next show you, Gentlemen, the operation for *hare-lip*. Now the hare-lip is a natural defect in the formation of the upper lip, consisting in a fissure extending from the red margin up to the nostril, so that when the individual puts the muscles of the face and of the lips into action, the sides of this fissure are drawn apart, and the most disagreeable appearance is presented; in fact, in a number of cases in hare-lip, we may not only say the appearance is very disagreeable, but that it constitutes a kind of hideous deformity, which of course the parents and friends of the child are exceedingly anxious to have remedied as soon as possible. This deformity presents itself under different circumstances: there may be simply a fissure in the lip, or there may be also a fissure in the alveolar process of the upper jaw and bony palate, as well as in the soft palate; that is, there may be a complete fissure running from the lip directly through into the pharynx. The fissure may exist on one side only, or it may exist on both sides; that is, you may have *double* hare-lip; and in the latter case there is a small portion between the two fissures, and there is a portion of bone corresponding to it. In this case you generally find that the fissure extends through the palate, the septum of the nose being visible externally, and indeed you have the cavities of the mouth and nose almost laid into one. Although a great gap appears in the lip when the individual is laughing, there is, in point of fact, no defect as far as substance goes; it is merely a separation, for if you put your fingers to the sides of the gap, and bring the edges together, you find that they can be readily approximated, in such a way as to show that the substance of the lip is as ample as in the natural state; the appearance of deficiency in the substance is only thus apparent when the edges are drawn aside by the muscles being thrown into action. It would be just the same if a perpendicular incision were made in the lip where there was no natural deformity; for if the muscles of the lip were put into motion, the edges of that wound would be drawn apart, though there were no defect in point of substance.

Operation.—The operation consists in paring the edges of this fissure, so as to reduce them to the state of a recent clean-cut wound, in bringing them together, and retaining them in this state of apposition, so that they may unite by adhesion or the first intention; and we find, that if this operation is performed at a proper time, and skilfully executed, it will completely remedy the defect. You can do it so completely, that, putting out of the question the slight cicatrix that remains after the operation, no one would know that the individual had been at all deformed. The first question in these cases is, What is the time, what is the age, most eligible for the performance of this operation? Should you operate in the period of infancy, or wait till the child is some years old, as being the proper time for the performance of the operation? Were it in our power, it would be desirable, of course, to unite the edges of the lip, and to

remove the deformity as early as possible, as it prevents the child from sucking; the lips cannot be drawn close around the nipple, so that the necessary vacuum cannot be formed with the mouth, therefore the child must be brought up by the hand till this defect is removed. It is not, however, in our power—we do not deem it eligible—to perform the operation immediately after birth; and then the question is, What is the time at which it ought to be performed? Very generally it has been stated, that the performance of this operation should be left till the child is some years old; it is very desirable, however, to remove the defect early, on every account; in my opinion, it is also advantageous as respects the success of the operation, that it should be performed at a comparatively early period. I should say, then, that in the third, fourth, or fifth month after birth it should be performed; at all events, you should perform it at such a period that it will not interfere with the process of dentition. There is often a good deal of irritation going on in the neighbourhood of the part which is the seat of this defect at the time of teething, so that it is desirable you should accomplish the cure before dentition commences, or put it off till after the child has got its teeth; it is, however, in my opinion, desirable to perform it before. It so happens that I have had, at various times, under my care a great number of cases of this kind; I have invariably performed the operation at the time I have mentioned, and I have not, in any one instance, either seen an unfavourable result from it, considered as an operation, nor a failure of the ultimate object of the operation, that is, the closure of the preternatural fissure. It has sometimes been said, that children are liable to convulsions at this time, and that a considerable loss of blood may act seriously on them, so that they may die from the mere effect of the operation. This has not occurred in any case that has come within my observation; in other respects children, at the time I have mentioned, so far as the constitution and the powers by which injuries are repaired are concerned, are very favourably situated for the operation. If nothing unfavourable takes place, we find that the process of adhesion goes on favourably, that the sides of the wound unite readily, and that the operation succeeds very well. Out of the great number of cases which, by some accident or other, have come under my care, I may mention to you, that not a single failure has occurred.

Now, the mode of performing this operation, at least the mode of uniting the wound that is made in remedying this deficiency, is in some respects singular; for exact contact of the sides of the wound is so important, and it is so likely that this contact would be deranged by the motions of the lips or some action of the features, unless we took some especial pains to keep the parts closely together, that we employ means of maintaining them united, which are hardly resorted to in any other instance; that is, we put a pin or needle, a hare-lip pin or needle, consisting of a silver stem with a steel point, through the sides of the wound, and we keep them united together by subsequently winding a portion of silk or thread round the needle or needles (in case we employ two) which are thus put through the sides of the wound. It is possible that the wound made in this case might be united simply by sutures, or by the approximation, which we can effect in the case of a wound of other parts, by adhesive plaster; however, we should run a good deal of risk in trusting to these means in this case, therefore I consider it better to employ the old and universally-practised means of uniting the wound by hare-lip pins. In practising this operation on the subject, you first of all make a division of the lip, so as to represent hare-lip; this is exactly in the situation in which it is found in the natural state. Now, in the natural hare-lip, the sides of this fissure are covered by the common integument connected with the mucous membrane that forms part of the lip; and the first object in the operation of hare-lip is to remove these edges so as to bring them into the state of a recent wound. The first question then is, What is the best mode of removing those edges? Now, there has been a great controversy whether the edges of the fissure should be removed with scissors or the knife; and what is the most advantageous mode of doing this. I consider that the scissors are the most convenient mode, and that you will do it best with that kind which has knife edges. The ordinary kinds are ground with oblique edges, they are not made exactly as a knife is made, they do not cut so smoothly; but scissors may be made in the same way that a knife is, and then they cut with great facility, without bruising the edges between the blades; and such scissors are the most convenient means for paring off the edges of a hare-lip. Now, the removal of these edges is a process of some nicety, because, unless you make the two sides of the wound exactly alike both in length and breadth, you do not unite the lip so as to leave it perfectly even. It is a point of great consequence to have the line of boundary between the integuments and the red part of the lip exactly level, and unless you have the two sides of the fissure in the hare-lip exactly of the same length, you will find that this line will not be precisely level. You should, therefore, measure them before

the operation—perhaps put a dot or two of ink upon the parts, so as to have a clear direction in performing the operation. It is of great importance that you should determine the points of your operation in your own mind clearly beforehand, in order that you may have the two edges of the fissure precisely corresponding with each other. You are aware that when you have once begun the operation on a child, there is much blood effused, it is moving about in so unmanageable a way, and there is so much difficulty in handling the lip (which is very small in those young subjects), that unless you have perfectly determined all the points previously, you do not find it very easy to accomplish your purpose. Supposing, then, the deficiency and the proceeding hitherto to have been such as I have pointed out, it has usually been the practice to employ two hare-lip pins, and to put one just at the point where the red part of the lip joins the external integuments, and another near the upper angle of the wound; but in performing the operation on the young subject at the age I have mentioned, and I have always performed it thus early, I have invariably found it sufficient to use a single hare-lip pin, introducing it at the lower part of the fissure, near the red portion of the lip, and to unite the wound at the upper angle with a simple suture. One hare-lip pin and one suture I have always found to be the most advantageous mode of uniting the wounds in those cases. The hare-lip pin consists of a hollow cylindrical portion of silver about the size of a common dressing probe, and having a sharp steel point, by which you make an opening for the silver part to be carried through the soft portion of the lip. Now, as in using the hare-lip pin the object is to keep the whole surface of the wound in the lip in exact apposition, you will find it expedient to introduce the point at a considerable distance from the edge which you have cut, and to carry it very nearly through the whole thickness of the lip. Very commonly it has been said you should carry the hare-lip pin so as to bring it out at two-thirds from the depth of the anterior surface of the lip, but it is, perhaps, better to carry it nearer to the mucous surface, almost transfixing the lip. You must, however, bear this in mind, that the pin is to be carried in at some considerable distance from the edge of the incision, so that you may embrace a considerable thickness of parts for the application of the ligature; if you were to carry it in nearer to the edge, you would find that the edges would not unite behind, and that a considerable fissure would remain there. Now, in this case I should introduce the pin so far from the edge of the incision (as you see), that the ligature should act on a considerable extent of surface; that is the situation; and if it is carried in in this direction, you observe that it will go through the lip in such a manner as almost to reach to the mucous membrane. If I had carried it in merely as far as I now show you, I should only have transfixed the skin, and when the ligature was applied the posterior part of the fissure would not be held in contact. Of course you carry out the point of the pin again as far on the one side of the wound as you introduced it on the other. Now the hare-lip pin has been introduced in the proper way, and when this is done, the steel point may be removed. You observe it has been introduced so as to embrace nearly the whole thickness of the lip, and you will immediately see, when the ligature is put on, that it will bring the edges of the wound completely into contact. Having introduced this pin thus far, I take out with the forceps the steel point, the silver part only being left in its situation. Then, in order to apply the ligature, you take a portion of silk, carry the two ends round each end of the pin, and turn them repeatedly in that direction, until you apply enough of it, and form a sufficient breadth to keep the edges of the wound in contact; you must also apply it sufficiently tight to keep the edges together, and at the same time you must not apply it so closely as to produce a degree of tension, when the inflammatory process which follows the operation comes on. Then having secured the pin with two or three turns of the silk, you can put in the simple suture, which I have mentioned above, as being sufficient to enable you to dispense with the use of another pin. You must follow the same rule with respect to this suture, which I have mentioned to you as applicable to the introduction of the pin, that is, you must embrace a considerable portion of the substance of the lip with it, so as to bring the entire edges of the wound into contact. A simple ligature suits for this purpose. In this instance, however, which is the case of an adult, the single hare-lip pin is sufficient of itself to unite the edges of the wound. It would not be necessary to use two hare-lip pins in this case, and much less would it be necessary if it were the case of an infant. And in operating on young children, I have generally found it necessary to have some hare-lip pins suitable for them, that is, smaller than might be necessary in other instances, for the less prominent the ends of the pin are, the less probability is there of the thread or ends being disturbed. After making so many turns with the silk that it may occupy a considerable surface, you tie the edges of the ligature together by a simple knot, and that finishes the operation. You do not put anything further over the wound; there is nothing wanted, in fact; you leave the wound

as it remains now, and you find that you can remove the pin, and cut out the simple ligature that is placed above it, about the fifth or sixth day, when you will usually find the fissure completely united.

Removal of Tumours.—I have spoken of the removal of tumours about the female breast, and so forth, and I shall now just exemplify to you the simple operation which is to be performed on those occasions. If the integuments are in a sound state, your object in removing a tumour would be to leave as much of them as possible, because by bringing the edges of the skin together after the operation, you can cover up the wound that has been made, and in that way you very much abridge the time that is necessary for the healing of it. This rule, however, of course, is not to be observed when you are operating in malignant diseases, and when you have any reason to suspect that the skin is involved in such disease; for the object of saving skin enough to enable you to close the wound, and to ensure its speedy union, is of much less consequence than that of removing every part to which any suspicion of disease can attach. In the case, therefore, of cancer or any malignant disease, you are not to consider it an object to save as much skin as you can; on the contrary, the primary object there, is to remove all the skin, as well as the other parts, that are at all involved in the disease. In performing the operation then, of removing a tumour from the breast, you simply make a couple of incisions, which isolate the disease from the sound integuments; you then dissect down, so as to detach entirely the part you wish to remove, and remove it as quickly as you can. In respect to the directions of the incisions, you will of course be guided in some measure by the form of the tumour which you are to remove, and by the facility with which you can perform the operation generally. Now in the case of the breast, it is expedient to make the lower incision first, for if you make the upper incision first, blood flows over the part where you are to make the lower, so that you cannot see distinctly the course you are taking. In this, therefore, as well as in the lip (and indeed the same observation is applicable to all operations), you should just plan out in your own mind the object you have to accomplish, determining the steps you are to take in doing the operation before you commence it, and thus you will prepare yourself exactly for what is necessary, you will be ready to go through the various successive steps of the operation without any kind of embarrassment, and with as much expedition as possible. This is a rule applicable to all operations, and which is just as important to persons much in the habit of performing operations, as to those who are not. Unless this kind of previous reflection be made on the mode in which the different steps are to be taken in succession, embarrassment will often arise, and you will not perform the operation so well. Having made an incision the whole length of the tumour, and having cut through the adipose and cellular substance with the first incision, you then detach the skin by a few strokes of the knife, so as just to expose the lower part of the tumour; then, having done that, make the upper incision with its extremities meeting those of the lower. This part of the operation you do quickly, it is merely a kind of rude dissection. The surface of the tumour is now isolated by these two incisions, and you may proceed either at the upper or lower edge to detach it entirely from the parts with which it is connected. This is accomplished by a few strokes of the knife; the tumour is supposed of course to be loosely, not firmly, adherent. Here a considerable portion of the integument has been removed, and of course the edges of the wound cannot in this case be approximated; but if you perform the operation where it is not necessary to remove any of the skin—if you make a simple incision and turn back the flaps of the skin, the edges of the wound may afterwards be brought completely together.

Tying the Brachial Artery.—I shall show you in the next place, the operation of cutting down upon, and taking up, the brachial artery, in doing which, I may exemplify to you the general course of proceeding we adopt in the operation for aneurism—the mode of laying bare the artery and passing a ligature round it for the purpose of tying it. I have already mentioned to you, that the object of operation for aneurism, is to tie a single ligature round the artery, after having passed it under the vessel, in the easiest way that you can, that is, with as little detachment of the vessel from its surrounding connexions as the circumstances will admit of. Now the plan I have found best adapted for this purpose, is, to employ an aneurism needle, which is narrow, sharp-pointed, and made as thin at the point and at the sides as is possible, without its having a cutting edge. The point of such a needle, when you have laid bare an artery, can be very easily carried under the artery, and in contact with it, and it will bring the ligature round the artery, so that you can carry it on in the situation necessary for tying it, without any more detachment of the vessel from its immediate connexions, than is absolutely necessary for the application of the ligature. Of course it would not be proper to have the needle sharp-pointed and cutting, but you may have it made very thin although blunt, and such a needle will pass with very great ease round an artery, and will enable you to pass a ligature round it with a very

inconsiderable detachment of the vessel; you thus tie the artery, leaving it with all its surrounding parts in the situation most favourable for those processes which are to go on after the ligature has been applied.

The brachial artery lies immediately on the inner side of the biceps flexor cubiti, and is there in company with the median nerve, and with the basilic and brachial veins. The basilic vein and the median nerve lie over the artery, that is, nearer to the skin; but the vessels and the nerve lie just upon the inner edge of the biceps, or perhaps a little covered by it; however, they are so near the surface, that in the living subject, the pulsation of the artery can be easily felt. The incision will therefore go parallel to the edge of the biceps muscle. I should observe to you, that whether you are operating in this case or in the case of any other artery, it is advisable that you should make a free external cut; it is a matter of no consequence whether you divide an inch more or an inch less of the skin, so far as the pain with respect to cutting through the skin goes, but it is of very great importance as to the easy performance of the operation. Nothing is more embarrassing than to be poking and dissecting in a small wound, to get at an artery where you are afraid of wounding some vessel, and where, in consequence of its being deep and low down, you find a difficulty in getting the ligature round it; now, almost all these circumstances you may avoid, by making the external incision an inch longer; you might do it without any risk either of increasing the pain or affecting the result of the operation. You might, no doubt, take up the brachial artery, with an incision of half the length of the one I here make, but with less facility. There is a great advantage in operating on the living over the dead subject in the case of arteries, which is, that in the living subject you can put your finger into the wound and feel the vessel, which is an important guide. Here, however, is the edge of the biceps, so that we cannot be very far from the brachial artery in this case. Here is the median nerve, and of course the brachial artery must be very near it. Some persons, when they are taking up an artery, particularly a large one, are apt to suppose that they should proceed very cautiously with the knife as they come near to the artery; the truth is, the artery is a pretty tough thing, and it requires a pretty good cut to wound it, so that it is not necessary to be extremely cautious so far as that goes. You may cut pretty near to the vessel, and scrape the cellular tissue around it, without injuring it; indeed you must make a pretty good cut, to cut through the coats of an artery; there is very little fear of doing any injury in a case of this kind. Then having exposed the artery with the edge of the end of the knife, you make a little incision on one side of it so as to get room for putting in the end of the aneurism needle—sharp at the point, narrow, and with the eye close to the end, so that you can get the ligature out when the end has just gone round the artery; now, having exposed the artery in this way, we shall find that the ligature will pass under it, I have no doubt, with great facility. You get the end of the needle under it in this way,—you gradually work it about, and then you see its point coming out on the other side. You see it makes its way with very little disturbance, and you do not want to detach the artery from its situation. You observe I have not done any thing to lift the artery up—I have not lifted it up with the finger and the thumb, it is only detached to an extent sufficient to admit of the needle and the ligature to pass round it. Here is the edge of the biceps muscle, here is the median nerve, and here is the brachial artery with the aneurism needle and ligature passed round it.

Lecture LXXX.

Operation of Hare-lip, resumed.—Urinary Calculi; Causes; Symptoms.—Sounding.

Hare-lip, resumed.—There are two points connected with the operation of hare-lip which I omitted noticing to you in the last lecture; the first of those is, as to the proper mode of proceeding in the case of double hare-lip, where there is a fissure on each side. The fissure of hare-lip, I may observe to you, when it is single, takes place on one side of the lip, it corresponds to the opening of one of the nostrils, and thus you may have two fissures, one situated on each half of the lip, corresponding to their respective nostrils. I consider the best mode of proceeding in those cases, to be that of operating separately on each fissure; operating on one side as in the case of a single hare-lip, and then, when the patient has recovered, operating on the other side. It would be possible, in the case of a double hare-lip, to operate on both fissures at once—that is, to proceed on each side, as you would do in the case of a single hare-lip, and to allow the hare-lip pin completely to traverse the middle portion, the portion of lip left between the two fissures; but you cannot be so certain of paring away each of those parts, so as to be able to bring the surfaces into the exact contact necessary to secure the proper result of the operation, as you can when you operate on each side separately. Another circumstance is this: the fissure of the lip is sometimes complicated with an unnatural projection of the alveolar process; and in those fissures of the

lip, you find that the socket of one tooth projects forward into the fissure; and sometimes, in the case of a double hare-lip, the middle portion of bone—that portion left between the two fissures of the bony palate—stands forward horizontally, and pushes up the middle portion of the lip in such a way as to interfere very much with the operation. Whether this takes place in the case of simple, or of double, hare-lip, you must, before you proceed to approximate the sides of the fissure, remove the impediment which this particular construction of the bone presents. You must, in the first place, cut off with a strong knife the irregular part of the bone with the portions of teeth which it may contain, and allow those parts to heal before you proceed to remedy the other deformity.

Urinary Calculi.

Concretions may form in any part of the urinary apparatus, at least in any of the cavities or tubes which are subservient to the excretion or retention or expulsion of the urine; that is, they may form in the infundibula or pelvis of the kidney, in the ureter, in the urethra, in the prostate gland, or in the bladder. The urinary concretions which thus form are commonly denominated stones, from their hard structure; indeed, both from their configuration as well as structure, persons might call them, in common language, stones, and the complaint is denominated, generally, *the stone*. In another form, urinary concretions nearly resemble gravel, and thus the term *gravel* has passed into common language to denote a certain form of urinary concretions, in which, instead of being collected into one mass, they are deposited in several small portions. In technical language, we generally use the term calculus as equivalent to the term stone; calculus and calculous disorders are the ordinary technical expressions. We might arrange those concretions according to the situations in which they are met with, such as *renal, vesical, urethral calculi*, and this denomination would be convenient enough for practical purposes, but it would not be accordant with physiological views; for we find that in whatever situation those concretions are met with, they are generally of similar construction, so that it is only in a surgical point of view that we regard them according to the parts in which they are found; for a concretion which forms in the kidney is, at first, a renal calculus; it then passes into the bladder, and it is a vesical calculus; it may go into the urethra, and then it is an urethral calculus, but yet it is the same kind of substance in all those situations.

Now, as the materials of urinary concretions are derived from the urine, their nature could not have been well understood, until the composition of the urine was ascertained. The recent progress of chemistry has led us to understand pretty fully the nature of the urine. Several pathological inquirers have defined with much accuracy, and unequivocally, the composition of the various urinary calculi, so that now the nature of those productions is pretty well ascertained and understood. As far as their chemical characters are concerned, those substances are considered in lectures on chemistry, and, therefore, I shall do no more than refer you on the present occasion, if you wish for minute information on the subject, to two excellent modern treatises on calculous diseases; Dr. Marcet's Essay on the Chemical History and Medical Treatment of Calculous Disorders, and Dr. Prout's Inquiry into the Nature and Treatment of Gravel, Calculus, and other Diseases connected with deranged Operation of the Urinary Organs. In these works you will find collected together all that you can want to know respecting the chemical histories of these substances.

Urinary concretions occur to our observation in three forms; we see them, in the first place, a powdery sediment, taking place in the urine after it is evacuated; this sediment consists of a matter which existed in a state of solution in the urine when it was evacuated, so that the urine in such cases is voided transparent, but in proportion as it cools deposites certain matters which render it cloudy, and which subside to the bottom of the vessel in which it is contained. There is a pinkish or a pinkish-white sediment very frequently observed in the case of febrile disorders, or in persons labouring under indigestion; it consists very generally of the *lithate of ammonia*, of *soda*, or of *lime*. There is a sediment occurring under other circumstances, called *white sand*, consisting of the *phosphate of ammonia* and *magnesia*, and the *phosphate of lime*. Then, again, those substances are observed in the form of *crystallized minute particles*, in which case they are called gravel, in common, and even in medical language. These consist in particles, varying in size, sometimes very small, sometimes larger, and generally, when accurately examined, have a crystalline figure. They are voided with the urine in their crystalline form, or they may be partly voided with the urine, and partly deposited from the urine as it cools, in the same way that the powdery sediment is. Then there is the case of *red gravel*, or *lateritious sediment*, in which case the patient may void some of those substances from the bladder in their concrete state; but it will often be found that he makes his water

clear and transparent, and that the particles crystallize in the vessel in proportion as the urine cools. The most familiar example of this kind of substance, is that which I have just last mentioned; it bears a pretty close analogy to some forms of red gravel, and consists of the *lithic* or *uric acid*. The third form in which urinary concretions are observed, is that of *calculi* or *stones*, and these are very various in their composition. The most common form of these substances is that of *lithic acid*, or uric acid in a concrete state; and the calculi thus composed are of a whitish-brown colour, and are generally deposited in successive strata, enclosing each other from the centre towards the circumference. *Lithate of ammonia* is another ordinary form of these substances; this consists of the lithic acid with ammonia, and it forms a stone considerably lighter in colour than that which is formed by the uric acid. In this plate in Dr. Prout's work, the concretion which I now point out to you, of a light-brown colour, represents the lithic acid. The phosphate of ammonia and magnesia, which has been called in chemistry *triple phosphate*, constitutes generally the exterior of a great number of them; it has a white appearance. Where the external layers, therefore, of a calculus consist of the triple phosphate, its appearance approaches almost to that of a piece of chalk; the interior is of a darker appearance—it is a different concretion. The exterior, then, of this stone, which is very different in appearance from the inside, consists of triple phosphate.

There is a stone very frequently met with, which consists of a combination of the phosphate of ammonia and magnesia, with phosphate of lime, and this stone possesses the property of *vitrifying*—running into a vitreous globule when exposed to the flame of the blow-pipe; hence it is called the fusible stone. Another consists of the *oxalate of lime*, and this is distinguished by its hardness, so that the stone is very heavy compared with its bulk; and in many instances it forms on its exterior irregular tubercular prominences, so that the stone thus formed has been compared to the fruit of the mulberry tree, and has been called *mulberry calculus*. Here is one with a great number of those tubercles. This is another, formed by the uric acid, which is tolerably smooth. However, this circumstance, the irregular tubercular appearance, is by no means a necessary character of the stone, which is formed by the oxalate of lime; you may have it not presenting those prominences.

It sometimes happens that a stone contains a mixture of different ingredients, although this is not common; and it still more frequently happens that stones consist of successive depositions of different substances; the several parts being, for example, lithic or uric acid, and then layers of the phosphates. Sometimes there is an alternation of those; thus we have uric acid, then the phosphates, then uric acid, then phosphates again, and so on. So that stones are met with occasionally which exhibit nearly all the constituents that belong to those various stones: a single stone *may* have them all.

When a stone is sawn through, it is usually found that the matters of which it consists are deposited in successive layers, so that you see very clearly successive strata; you do not see a uniform combination of the substances throughout, but you observe there are numerous layers, which are very distinctly visible when the stone is sawn through. Indeed the successive depositions of matter which constitute a large stone, may occupy a period of several years; during this time the chemical composition of the urine may vary very considerably; the state of the health of the individual, and consequently the state of the urinary secretion, may be very variable. Thus it will happen, that for a certain length of time no matter at all is deposited, and again, that the stone, after it has remained in a quiescent state for a length of time, has a new stratum laid upon it, and that may be quite different in its nature to the substance which formed the stone previously. Thus it will happen in these old cases of stone, that you have a succession of different ingredients or materials, depending on the state of the health of the individual, and the time when the substances have been deposited.

When you saw through a stone of this sort, you very commonly find that the substances have been deposited round a small piece in the centre; it appears that a small portion of matter of some kind or other has formed a centre, round which the calculous matter has been deposited, and this is very commonly called the *nucleus* of the stone. In the case of certain calculi which are found in the bladder, it sometimes happens that the nucleus of a stone is of some foreign substance that may have been accidentally introduced into the bladder. This is a specimen of calculous matter deposited upon a portion of foreign substance that had been introduced into a female bladder through the urethra; and we have a specimen in the museum of a stone, which I removed from a patient in the hospital, where the calculous substance was deposited round a portion of a metallic bougie; the patient had been in the habit of using the instrument, and a portion of it had broken off; although in general the nucleus consists of some con-

cretion that has been deposited from the urine itself.

Now, of the various substances that I have just enumerated, all are not of equally common occurrence. The lithic or uric acid forms by far the greater number of urinary calculi; and Dr. Prout states, if we refer to a table of this description, that those stones of which the lithic acid is the principal ingredient, and those in which it forms the nucleus, will form about two-thirds of all the calculi that are found in the human bladder. The phosphates come next, that is, the stone consisting of the phosphate of ammonia and magnesia, and the fusible calculus, the oxalate of lime; the mulberry calculus comes next. There are other ingredients of stones met with in certain rare instances, but they are too uncommon to render it necessary for me to mention them in this general view of the subject.

It seems probable that, in a great majority of instances, the origin of urinary calculi is in the kidney; that something is deposited from the urine in that organ, some concretion takes place there, which passes through the ureter into the bladder, and forms a nucleus round which successive depositions take place. Not uncommonly we meet with depositions in the kidney; generally speaking, however, a concretion which is deposited in the kidney is of a size which admits of its passing along the ureter into the bladder, so that it does not remain in the kidney. But in certain cases these concretions do remain in the kidney, and obtain a considerable magnitude there; they may even become so large as to fill up the pelvis of the kidney and the infundibula, forming a pretty accurate cast of these parts. Here is one that does so; this is a large concretion, filling up the pelvis and infundibula. These concretions generally take the form of the cavities in which they are deposited. The greater number of concretions that are thus deposited in the kidney, consists of lithic or uric acid, and hence it is that we find the nuclei of a great proportion of the stones extracted from the bladder to consist of this uric acid, although the other parts of them may consist of a different matter. It is possible, however, that calculi may form entirely in the bladder. If a foreign substance is accidentally introduced into the bladder depositions may form around it, though it never had been in the kidney.

In stating that the great majority of calculi are formed in the kidney, I conceive, and no doubt it is possible, that a stone may have its origin in the bladder; indeed, certain states of the bladder in which the urine is retained in it, and placed in a situation favourable for the deposition of its contents, are likely to be attended with the formation of calculi. This is the case in disease of the prostate, where the third lobe of the gland becomes augmented in size so as to impede the expulsion of the urine; in such a case a calculus is frequently found in the bladder. I believe that other depositions as well as the deposition of uric acid may be found in the kidney, for example, the oxalate of lime or the phosphate of lime, and thus the nucleus of other stones than those which have uric acid in the centre, may be furnished from this part. The greater portion, however, of the bulk of calculi, no doubt, is deposited from the urine in the bladder; and it is sufficient to produce this deposition in the bladder, that some substance, either a nucleus of uric acid, or of the oxalate of lime secreted in the kidney and passed into the bladder, or a foreign body introduced into it—it is sufficient that some substance of that kind should exist in the bladder, to ensure the successive depositions of various matters in the way I have mentioned. I have stated already that the depositions which take place in the kidney are generally small, and that they pass in that state along the ureter into the bladder. They occasionally become considerably larger, but, at all events, whether they are small or large, they are not, in the kidney, the objects of surgery. It may, perhaps, have happened in a rare case, that a calculus existing in the pelvis of the kidney may have excited inflammation of that part, may have produced abscess, and this may have become discharged externally; but we can hardly suppose any instance in which the discharge of a calculus in this situation, can be at all assisted by any surgical proceeding. I may make the same observation with respect to calculi in the ureter. Generally speaking, the passage of a stone from the kidney to the bladder is indicated by excessive pain in the direction of the ureter; by paroxysms of pain of the most severe kind, commencing in the kidney, shooting along the ureter down to the bladder, and ceasing as soon as the stone has passed into it from the ureter. But this severe pain is not a necessary circumstance in the passage of a calculus from the kidney into the bladder; a calculus may pass in this way, and be urged through the ureter into the bladder, without the patient experiencing any considerable uneasiness. There are instances in which a calculus of considerable size has been voided through the urethra without any uneasy sensations indicative of its presence in the kidney, or its transmission along the ureter. It is, therefore, only where the calculus passes into the bladder, that it becomes the object of surgical attention.

Causes.—I should have observed to you, respecting the causes of calculi, that the circumstances immediately determining their

formation must be looked for in the state of the urine. The formation of urinary concretions presupposes an unnatural state of that secretion. When we consider that the urinary secretion is one of the great outlets of the body, one of the principal channels by which superfluous and noxious matter is separated from the frame; we can easily understand how it happens that the composition of the urine may vary very considerably, and how it may come to possess the properties which give rise to these concretions. We see that, in a case of an attack of fever, or even of simple indigestion produced by excess in eating, that the composition of the urine will be so altered as to produce, perhaps, an abundant deposition of the urate of ammonia. This is merely temporary; it goes off with the cause which produces it. But there are other conditions depending on the habits of an individual—conditions that may be considered habitual, and so long as they are kept up, the chemical composition of the urine will be such as to render the formation of such concretions very probable. When the state of the urine is such as to make it abound with lithic acid, so as to render probable either the deposition of red gravel, or the formation of lithic concretions in the bladder, the condition has been called by Dr. Prout, the *lithic diathesis*. Another condition, when the urine abounds with the phosphates, and which occurs under a different state of the individual—in a different state of health—Dr. Prout calls the *phosphatic diathesis*. We must look, therefore, to those states of the urine as explaining the nature of the substances which form the depositions of urinary concretions in different cases, and we must advert to the general state of the health of the individual, and his habits of living, in order to understand how it is that the urine forms these depositions. Now, in respect to the latter part of the inquiry, we really labour under a good deal of difficulty; we can scarcely perceive how, with respect to the urine, the one or the other diathesis is produced. We can see that, in general, irregularities of diet will produce morbid states of the urine, but we are at a loss to point out what the peculiar circumstances are, that will give to the urine a disposition to deposit lithic acid, or the phosphates, or the oxalate of lime. On this subject our knowledge is not sufficiently advanced to enable me to bring forward any thing definite and clear.

In speaking of the causes of urinary concretions, we are led immediately to advert to one circumstance, which is their great comparative frequency in young subjects. About half of the operations for stone are performed on subjects under the period of puberty. The affection is also much less frequent in females than in males. Dr. Prout gives a view of 1058 cases; of these 509 occurred in individuals at or under the age of fourteen years, and 549 above the age of fourteen. Of the same number, 1014 were males, and only 48 females. Now it has been considered, that the greater frequency of the complaint in young subjects than in adults, partly arises from the comparative smallness of the urethra, so that a minute nucleus which would pass through the urethra of an adult is detained in the bladder, in consequence of the small dimensions of the urethra in the child. The comparative infrequency of the occurrence of stone in the female, certainly admits of a very easy explanation from the short course of the female urethra, and its large dimensions.

Calculus as it exists in the bladder, is formed under very various circumstances. In the first place, the concretions vary very much in size, they vary in weight from a few grains to forty or even fifty ounces, for calculi in the bladder have sometimes obtained that magnitude. I have taken a calculus out of the bladder of a child, which I suppose would not have weighed more than eight or ten grains; and this is a calculus taken out of the bladder of an adult, which will weigh more than a quarter of a pound. The form of calculi in the bladder differs very much; they are more or less rounded, spherical, oval, or flat; sometimes particular parts of the calculi are moulded according to certain parts of the bladder with which they may have been in close contact. The number of calculi varies very much; there is often a considerable number, but most commonly there is only one; and in the case of there being more than one, they are apt to come into contact at certain points at which they have a smooth surface; no further depositions taking place on those parts, these surfaces correspond when there are more stones than one, and are the *pierres à facettes* of the French. Usually they are loose in the bladder, but there are instances in which calculi are adherent to some growths in the bladder; or contained in cysts communicating with the bladder. Here is a specimen of the latter sort. This circumstance, however, of the encysted state of calculi is a very rare occurrence; it is hardly to be calculated upon as likely to modify any of our practical proceedings.

Symptoms.—The symptoms of calculi, as you will naturally expect, are principally those which you would suppose that a mechanical irritation affecting the internal surface of the bladder would produce. The presence of a foreign body within the mucous surface of the bladder, which is immediately irritated by it, you would suppose likely to produce pain; to produce not only pain of that part, but sympathetic pains of various other parts, having their supply of

nerves from the same source as the bladder. Thus you will not be surprised to find, that stone in the bladder produces pain not only in the region of the bladder, but also along the course of the urethra; that it frequently produces severe pain at the extremity of the penis, and often pain about the thighs and the loins without producing any pain in the bladder at all. The pain which is thus produced by calculus in the bladder, differs materially in degree; the patient may experience slight uneasiness, or he may be subject to the most excruciating pain; indeed, the sufferings that are produced by stone in the bladder, are ranked among those which are of the most torturing kind, frequently coming on in paroxysms, under which patients suffer as great a degree of agony as they can possibly experience under any affection whatever. There are generally intervals, however, in this complaint in which the patient is comparatively free from pain. The pain comes on most frequently when he voids his urine, that is, when the bladder contracts, and it is usually pretty severe after the urine has been voided, that is, when the bladder, being emptied, its coats are brought into immediate contact with the foreign body; when that foreign body is pressed against the neck of the bladder, there is also great pain: the act of voiding the urine is also often extremely painful. In other instances, the patient experiences so little pain, that sometimes the presence of stone is only discovered accidentally. I remember being called to give assistance to an elderly gentleman, in consequence of his not being able to make water; he laboured under an enlargement of the prostate gland, and had not complained particularly of any thing being wrong about his urinary organs, or sought medical assistance until I saw him; I introduced the catheter, and drew off a large quantity of water from the bladder, and after introducing the catheter two or three times, I struck against a stone behind the prominent portion of the prostate, which had obtained considerable magnitude, though it had not interfered with the passage of the urine, or caused him any serious inconvenience. He was actively employed until retention of urine came on from disease of the prostate gland; and he did not know that he had a stone in the bladder. Patients have died of other complaints, and stones have been found in their bladders, although they have not been aware of the existence of any such substances. Stone, therefore, is not necessarily such an extremely painful disease as is supposed.

The presence of stone in the bladder produces an habitual irritation of the organ, which makes the patient feel a frequent desire to pass his water; and this urgency sometimes comes on every quarter of an hour, every half hour, or every hour; generally speaking, it is much more frequent when a calculus is lodged at the neck of the bladder. The urine often presents an unnatural appearance when there is a calculus in the bladder, that is, the mucous coat of the bladder has its secretion altered; it pours out an excessive quantity of mucus—a thick, ropy, and viscid secretion; sometimes a red fluid escapes; there is blood mixed with the water, which renders it red, or bloody, and this is observed to take place more particularly after exercise, and after any kind of exertion by which the calculus is shaken in the bladder; the same causes produce an increase of the sufferings of the patient, so that he cannot ride on horseback, he cannot ride over a rough road or along a paved street in a coach, without considerable aggravation of his sufferings. The alteration of the discharge from the mucous coat of the bladder, sometimes proceeds so far as to produce copious bleeding; you have a large quantity of blood poured out into the bladder, and coagula of blood are voided with the urine. These are the effects immediately produced by the presence of stone in the bladder, in consequence of its irritation as a foreign substance acting upon its mucous coat. But these symptoms, striking as they appear to be, and directly as they seem to point out the existence of a source of irritation affecting the mucous membrane of the bladder, are not conclusive as proofs of the existence of a stone in that viscus, for they may, in a great measure, take place under other circumstances, that is, in the case of other diseases attacking the bladder. Various organic diseases may produce changes in the state of the urine, pain in the region of the bladder and neighbouring parts, inconvenience and difficulty in the evacuation of the urine, and, in fact, nearly all the circumstances which I have enumerated to you as being produced by the presence of stone. In order, therefore, to prove that the symptoms are produced by stone in the bladder, and not by any other of those affections, it is necessary to introduce a metallic instrument, to touch or strike upon the stone; and that is the only proof on which you can rely, as showing that stone actually exists in the bladder, in a particular case. The operation of examining the bladder in this way for the purpose of directly determining whether stone exists in the bladder or not, is technically called *sounding*, and it consists, usually, in the introduction into the bladder of a polished steel instrument called a sound. When such an instrument strikes upon a hard body, it produces so different a sensation from that which is caused by its coming in contact with any part of the bladder, that you immediately

detect the nature of the case; and indeed if the sensation communicated to the hand were not sufficient for this, you may also have the additional evidence of the sense of hearing, for you can strike the metallic instrument against the hard substance so as to produce a sound that is audible, a sound that sometimes may be heard at a considerable distance from the patient; and when you have that evidence, you can no longer entertain a doubt respecting the case. The most convenient form of an instrument for sounding the bladder, is the shape which I have already described to you as being the fittest for catheters, and all similar metallic instruments; that is, a curvature constituting the fourth of a circle of four inches in diameter. This is a shorter or smaller curve than is ordinarily found in sounds and staffs, but it is a form of the instrument which enables it to move freely and easily in the bladder; the bend of it does not strike against the back and other parts of the bladder, so that you can move it about and examine the bladder in different directions, to ascertain what is in it. Baron Heurteloup gives to the instrument which he employs for the same purpose, a still smaller curve; that is, the curved point of his instrument is the quarter of a circle, of which the diameter is three instead of four inches; and as he seems to have paid great attention to all the circumstances observed in these cases, I dare say that this may be found a proper shape to be used for the purpose. You introduce then the instrument; you turn its handle so as to direct it from side to side in the bladder; push it on to the back of the bladder, draw it towards the anterior part; introduce it completely, and draw it a little out again, so that merely the end of the instrument shall be within the bladder, and then move it about again, trying thus in various ways, so that if a stone is in any part of the bladder it may not escape the contact of the instrument. And here I may observe to you, that should there be any fluid in the bladder, the stone will always be in the lower part, and the lower part will vary according to the situation in which the individual is when you are sounding him. Thus what is the lower part in one situation, in another situation would be the upper part; if the patient is lying horizontally, you may easily judge whether the stone will be at the bottom of the bladder or not. The projection of the inferior part of the prostate sometimes raises the end of the sound where it enters the bladder, so that a stone resting at the bottom of the bladder, behind the prostate, may escape detection, even upon a very careful examination; and in this case it is expedient, where you suspect the existence of stone and do not find it, in the ordinary way of sounding, to raise the pelvis, when the neck of the bladder being no longer the most depending part of it, the stone will not remain in the situation in which the prostate affords that mechanical impediment to your ascertaining its existence. It appears to me, on the whole, that the mode in which the bladder is sounded by Baron Heurteloup, and by the gentlemen who practise the breaking of stones in the bladder, is peculiarly well calculated both to ascertain the presence and size of the stone, the capacity of the bladder, and a variety of other circumstances of consequence—of more particular consequence, certainly, to those who practise such operations, than to those who practise lithotomy, because until those points are ascertained, it cannot be known whether the breaking of the stone in the bladder is practicable at all, or in what way the various measures that are to be adopted should be had recourse to in the particular instance; but with respect to ordinary lithotomy, the simple operation of sounding, in the way I have mentioned, will be sufficient for the purpose. In the preliminary examination which takes place before the operation of breaking down the stone, it is usual to let the urine out of the bladder, and then to inject it with warm water, so that the capacity of the bladder is pretty accurately ascertained; and in that state certain circumstances can also be ascertained, in reference to the position of the stone, whether there be one or more stones, and so forth, which cannot be well found out in any other way.

The proceedings we are to adopt in reference to those circumstances we must defer till the next lecture.

INFLAMMATION OF THE PLEURA, LUNGS, AND PERICARDIUM, MISTAKEN FOR RHEUMATISM.

By ALEXANDER THOMSON, M. B.

I AM indebted for the following details of the anomalous symptoms of this case to the kindness of Mr. Eyre, surgeon, of London-street, Fitzroy-square, who was her medical attendant, and to my father, who was consulted in the case.

Mr. Eyre was called to see Mrs. Lloyd at about 9 o'clock A. M. April 27th. He found her in bed with her clothes on, a woman of a robust make, apparently between 40 and 50 years of age, whose occupation was to carry about milk for sale, with which she had as usual been out on that morning, when she was suddenly seized with illness and obliged to return to her lodgings. Mr. Eyre was informed, both by herself and her friends,

that she had not been unwell before the previous evening, on which she had felt rather uneasy, although she stated that her bowels had been for some days in a constipated state. It has since been ascertained that her friends considered her to have been pregnant for 3 or 4 months, during which period she had not menstruated, and that she had no medical treatment until the visit of Mr. Eyre. She complained of pain, though not great, in the head, and diffused over the whole of the abdomen;—she was quite collected, but not much inclined to answer questions, and very desirous of being allowed to remain quiet. Her respiration was hurried, her tongue coated, her skin hot and dry, her pulse quick and small. The following medicines were ordered.

℞ *Hyd. submur.* gr. iv;
Colocynth ext. comp., gr. xij, ft. pil. iv, statim sum.

℞ *Magnes. sulph.* ℥vj;
Sennæ tinct., f. ℥ij;
Sennæ inf. f. ℥iv. Carui aquæ q. s. quo ft. *Misturæ*, f. ℥vj. Sum. 2nda quâque horâ, donec responderit alvus 4ta pars.

Half past 3 P. M.—Mr. Eyre found her bleeding freely from the temples in consequence of leeches, which had been applied in his absence on account of the supervention of delirium. The aperient medicine had acted slightly, and she was by this time tranquil and sensible. Mr. Eyre, therefore, having ordered the medicine to be continued and the bleeding to be encouraged, left her for a short time; but was very soon recalled and informed that she had had a fit, and was apparently dying. On his arrival, he found the pulse scarcely perceptible, the extremities cold, the respiration short and hurried. She evidently understood the inquiries made regarding her feelings, but answered them with difficulty. Mr. Eyre now sent for Dr. A. T. Thomson, before whose arrival these symptoms had gradually passed into those of strong excitement; and to the latter gentleman I am indebted for the details of the remainder of the symptoms.

Half past 4 P. M.—Dr. Thomson arrived and found her in a state of calmness after a severe attack of phrenitic delirium, with some degree of suspicion in her look; with suffused, bright, and scintillating eyes, flushed face, the surface generally higher in point of temperature than the moist state of the skin would have led one to suspect, the pulse 130, but small and irritable, and such as he conceived did not indicate the necessity of venesection, in addition to the abstraction of blood by the aid of leeches, which had already taken place. She complained of considerable pain and heat of the head, answered questions when her attention was roused, but soon sank back into a kind of oblivious state, being perfectly heedless of what was going on around her. Her bowels had been freely opened, but the stomach was extremely irritable, and had rejected both medicine and nutriment. Dr. Thomson ordered the calomel to allay this irritability, and the tinct. of foxglove in successively-augmented doses, to allay the general excitement and the fever, as in the following prescriptions.

℞ *Hyd. subm.*, gr. viij. Panis micæ q. s. ft. pil. quamprm. sumâ.

℞ *Ricini ol.*, f. ℥iv;
Acac. Muc., f. ℥iij;
Aquæ, f. ℥j;
Tolut. syr. ♏ x, ft. haust. horâ post pil. sum.

℞ *Digital. tinct.*, f. ℥j;
Ammon. acet. liq. f. ℥ij;
Camph. Mist., f. ℥ivss;
Tolut. sy. f. ℥ij. M. Sumr. cochl. amp., post alvum purgm. ij, deinde 3tiis elapsis horis, iij; et 4ta quâque post secundum dosum horâ, iv.

The head was ordered to be shaved and kept cool with an evaporating lotion, and every means of soothing and calming the irritable state of the system to be adopted.

28th.—Dr. Thomson found his patient much better, after having enjoyed some quiet sleep during the night, lost the pain of the head early in the morning, perspired freely immediately upon the abatement of the pain in the head, and passed since the last visit, some dark-coloured, highly-offensive, evacuations, and some high-coloured urine free from any deposite. The pulse was under 100, fuller and less wiry. The head was at this time perfectly free from pain. She complained, however, greatly of her side, at a fixed spot immediately under the right breast, where the side felt tender upon pressure, but was neither red nor discoloured in any manner. Dr. Thomson, upon examination, considered this pain to be muscular, and as it had not been felt till the head was relieved, was disposed to regard it as rheumatic, and the result of metastasis from the head, although upon strict inquiry he could not learn that there had been any pains of the extremities, or of any other part of the body, except slight pain and aching of the loins, which she attributed to gravel. Under the impression of the whole complaint being rheumatic, he ordered the following medicines:

℞ *Hyd. submur.*, gr. ij;
Jacobi pulv. veri, gr. iij;
Opii extracti, gr. iss ft. pil. ij h. s. sumæ.

℞ *Magnes.*, ℥ij;
Colchici semin. vini, f. ℥iij;

Hyoscyam. tinct. f. ʒij;
Papav. albi syr., f. ʒij;
Aquæ fontanæ, f. ʒij. M. sumr. 5tâ quâque horâ pars quarta.

A blister was also ordered to be applied to the side, if the pain had continued. This was not, however, deemed necessary.

April 29. She stated that she was better, had had no recurrence of the pain in the head, that the pain had left the side during the night and attacked the shoulders, but had again returned to the side, and was now much less severe than before. Notwithstanding her favourable report, her countenance had an anxious expression, her lips and cheeks a livid hue, and her pulse was in a state of depression indicative of a collapse, not to have been expected from the former symptoms. Dr. Thomson, therefore, augured unfavourably of the case, informed her friends of her precarious state, ordered small quantities of weak white wine whey to be given from time to time, and the following medicines:—

℞ *Sodæ bicarb.*, ʒij;
Columbæ tinct., f. ʒiij;
Papav. syr., f. ʒj;
Aquæ, f. ʒvss. M. Sumr. 4tâ quâque horâ in impetu cum ampl. limonis succi cochl. j. effervescentis, pars 4ta.

℞ *Camphoræ*, gr. v;
Hyoscami ext., gr. iv. ft. pil. ij h. s. sumæ.

30. After having passed a comfortable night, and expressed to her friends, upon waking that she felt much improved, she died at seven o'clock A.M., half an hour after having declared her amendment.

May 2d. Morbid Appearances.

The body of this woman was plump, and, to external appearance, in good condition. The features were by no means distorted, but exceedingly tranquil. The lips were of a florid-red hue. The skin of the face and neck was covered with red patches, which, when carefully examined, appeared to be produced by highly injected subcutaneous vessels. The cellular tissue of the scalp was remarkable for being traversed very densely with minute vessels loaded with red blood, but the fasciæ of the epicranial muscles were as white and free from red vessels as usual. The scull was fully a quarter of an inch thick and very dense, having scarcely a trace of diploë. The dura matral arteries were unusually full of red blood, which had even been forced into their minute extremities, ordinarily containing only white blood, so that the dura mater had the appearance of being inflamed, and had between it and the arachnoid a considerable quantity of limpid, transparent, colourless fluid. The arachnoid membrane of the encephalon was perfectly transparent, and free from any trace of inflammation, but raised from the convolutions by a plentiful supply of limpid brownish serum, which also separated the convolutions both of the cerebrum and cerebellum from one another. The pia mater of the encephalon was loosely adherent to the convolutions, and separable from them by the slightest effort, while both its arteries and veins were remarkably turgid. The substance of the encephalon, including cineritious and medullary, of both brains, was unusually soft, and yielded to the slightest pressure of the fingers; but that of the pons and medulla oblongata remained firm. The ventricles all contained a considerable quantity of limpid sanious serum; each of the lateral ones about three drachms. The plexus choroides and venæ magnæ Galeni, with their branches, were destitute of blood, while the plexus was crowded with a number of vesicles about the size of millet-seeds, containing a limpid colourless fluid. The medullary matter of the cerebrum, when cut across, presented remarkably few bloody points; indeed, the chief part of the blood within the head seemed accumulated in the vessels of the meninges. The vessels of the neck, particularly the minute vessels of the cellular tissue, were gorged with blood. The larynx and trachea were most intensely inflamed in every part of their mucous membrane, but more particularly in that part investing the glottis, and were covered throughout with a dirty-brownish, rather thick, muco-purulent fluid. The cellular substance of the anterior mediastinum had its minute vessels injected with red blood. The pericardium was quite opaque, and densely covered with minute red vessels and scattered petechiæ, both on that portion investing the heart, and in that which is attached to the fibrous capsule. It contained about a drachm of a limpid brownish serum, and on the surface of the middle of the systemic auricle presented three or four small patches of attached coagulable lymph. The heart itself appeared quite natural, both in its substance and in its lining membrane. The semilunar valves of the aorta were opaque and semicartilaginous round their attached margins; two of them had begun to be united by their contiguous margins; and one of them had in its margin two orifices large enough to admit a couple of linseeds, not produced by recent fracture evidently, because the polished membrane of the valves was continuous over their edges, and they could not be extended by considerable violence. The origin of the aorta had a number of small semicartilaginous plates scattered about the region occupied by its valves. It contained a large coagulum,

which had taken a mould of its valves. The systemic auricle contained a considerable quantity of dark black coagulum, as did also the pulmonic ventricle and pulmonary artery. The pulmonic auricle contained a very small coagulum, and none in its auricular appendage. The lung of the left side was remarkably inflamed, and did not collapse. The whole of the lower lobe was closely invested by a dense yellow, recently-formed mass, of about one-sixth, and, in some parts, one-fourth, of an inch thick of coagulable lymph, which, without being yet organised, although parts of its surface already received vessels from the pleuræ, kept it in a state of intimate adhesion with the parietes of the thorax and of the pericardium. In every part adjacent to any portion of this artificial deposite, the whole of the pleura was intensely injected with red blood, and had in its substance numerous petechiæ, while, in some places, that investing the lung was raised from the lobules by white masses of coagulum. The whole of the substance of this lobe was in the second or grey stage of hepatization, and was rapidly passing into the purulent or third stage; it sank readily in water, and broke under the slightest pressure of the fingers into granules mixed up with a brown muco-purulent matter, and in some few spots, was so far advanced into the purulent stage, as to contain abscesses of the size of a kidney-bean. The whole of the pleura of the upper lobe also, and of the thoracic parietes of this side, was densely covered with minute red vessels, and partly with petechiæ. The upper lobe was in the state of inflammation which immediately precedes hepatization, or of simple engorgement. The lung of the right side was in a state nearly approaching to that of the upper lobe of that of the left side. Its lower lobe was adherent by old adhesions to the median half of the diaphragm, and to the thoracic parietes. The pleuræ were not so much inflamed as on the right side. It is remarkable, however, that a band of old adhesive membranes proceeded from the margin of the tendinous lobe of the diaphragm directly and horizontally to the costal pleura, between the sixth and seventh ribs, so that the diaphragm could not contract in order to dilate this cavity of the thorax, and the lung could not pass down when dilated, between the diaphragm and paries of the thorax. The mucous membrane of the bronchial ramifications in both lungs was intensely inflamed, and covered over with dirty-brown muco-purulent fluid, but not ulcerated. One of the bronchial glands on the left side was indurated and blackened, and contained a few earthy concretions. The diaphragmatic peritoneum and falciform ligament of the liver were slightly inflamed. The spleen was attached to the diaphragm, and was easily broken down into a pulpy mass by slight pressure of the fingers. The omentum, mesentery, mesocolon, and abdominal parietes, were remarkably loaded with fat. The peritoneal investment of the last foot and a half of the ileum was considerably inflamed. The liver was remarkably large and externally hard, but uniform in colour, though somewhat paler than natural, and broken down under slight pressure of the fingers with nearly as much ease as the spleen. The gall bladder contained a considerable quantity of bile, but was not distended. The whole of the intestines with the stomach contained much fluid resembling water, but no solid matter. The peritoneal surface of the uterus and of its appendages was intensely inflamed; but more particularly of the posterior surface and of the fallopian tubes. The broad ligaments contained, particularly in that part of them which lies between the ovarium and the free extremity of the fallopian tube, but also scattered over the surface of the fallopian tubes themselves, several tumours, varying in size from that of a millet-seed to that of a pea, some round, some oval and compressed, some conical, all translucent, pointing backwards, and containing a transparent brownish serum, and each furnished with a cyst of its own, the inner surface of which was smooth and polished. The right ovarium, which was of its natural size, resembled in appearance the convolutions of the brain, and was inflamed at its inner angle and posterior surface only, beneath which were also a few petechiæ. The left ovarium had yielded its position to a tumour, about the size of the woman's doubled fist, of an ovoidal form, the blunt end of the egg being presented towards the base of the triangular ligament of the ovarium. This tumour had pushed the uterus a little over towards the right and anterior part of the pelvis, but had not at all increased the length of the inner corner of the triangular ligament of the ovary. The ovary itself was flattened out into a membranous substance, lying between the peritoneum and cyst of the tumour, by which it had been pushed aside, and on the small apex and exterior side of which it was spread. Thus expanded, the ovary covered a space about equal to four square inches, and was in no part above one-twentieth of an inch in thickness, but retained some traces of the convolutions of its surface. The peritoneal coat of this tumour was much crowded with red vessels, and when it, together with the expanded ovary, was carefully dissected back, the second coat of the tumour was found to consist of fascia-like fibres deposited parallel, or nearly so, to one another, and radiating also from beneath the expanded ovary. This coat was densely

covered with long vessels radiating from beneath the ovary, and running parallel to one another, and to the fibres. The third or inner membrane of the sac, was extremely thin, covered with minute red vessels stellularly disposed, and smooth and polished on its inner surface, and enveloped a glary colourless fluid. There was no body found within this fluid, so that from the nature of the sac, the whole of whose parietes was not one-tenth of an inch in thickness, there can be no doubt of its being an incipient ovarian dropsy. The expanded ovary had several petechiæ in its substance. The inner surface of the vagina, os tincæ, and uterus, were most minutely and densely studded with vessels turgid with red blood, and the last had between the transverse rugæ of its neck several corpuscules, resembling in appearance those described as occurring on the broad ligaments, and not unlike the bodies described by Cloquet as the ova of Naboth. The substance of the uterus itself appeared somewhat redder than natural, and contained at each angle of the fundus, immediately above the points, where it is traversed by the fallopian tubes, a tuberculated fibro-cartilaginous tumour, that on the right side being largest, and about the size of a hazel nut, the other being only half the size.

REMARKS.

The chief interest of the case is derived from the total absence of the symptoms usually found in inflammation of the lungs, pleura, and pericardium, while all these organs were in a state of most active disease. It appears that this is one of those cases in which there is a peculiar tendency to inflammation of the sero-fibrous tissues; for we have the blood of the encephalon chiefly accumulated in the meninges; we have considerable serum thrown out by these meninges; we have intense inflammation of the pleuræ both old and recent, and of the pericardium and investing membrane of the heart. We have adhesion of the spleen to the diaphragm, inflammation of the diaphragmatic peritoneum of the falciform ligament of the liver, of the peritoneal investment of the last foot and a half of the ileum, and of that of the uterus and its appendages; besides, we have the pain in the least affected side, and many anomalous symptoms more characteristic of rheumatic inflammation than of pleuritis, or of peripneumony. It is not improbable that the pain which did not come on in the right or least affected side till the head had been relieved, arose from an effort of the confined diaphragm of that side to contract, in order to make up for the deficiency of the lungs on the opposite side, by which the confining membranes had a tendency to remove the costal pleura from the side, particularly as these membranes were attached at the very part at which the pain was perceived.

The case is also remarkable, because the menstrual discharge seems to have ceased during the growth of this ovarian tumour, at least, it is highly probable from the magnitude of the sac, that the three months was amply sufficient for its development. It is also not improbable, when we reflect on the fibro-cartilaginous tumours developed in the substance of the uterus, that these, together with the ovarian cyst, owed their development to the vicarious excess of blood accumulated in the uterine vessels, and those of its appendages, not being able to find a vent in the usual catamenial discharge. Again, the tendency to form the little serous sacs, which have been noticed as being found both between the layers constituting the uterine ligaments, and under the peritoneal investment of the uterus itself, is worthy of remark, since it may be conjectured, that the ovarian cyst owed its origin, not to any disease in the substance of the ovary itself, but to an unusual development of one of these little serous cysts, occurring in, or generated in connexion with, the peritoneal investment of the ovary itself.

The preparation of the uterus and its appendages is deposited in the Museum of the London University.

It has been ascertained, that she was very much addicted to drinking, and had run up scores for spirits at several places in the neighbourhood. This fact accounts for the state of the liver.

70, George-street, Euston-square,
August, 1830.

MEDICUS OF HALF-MOON STREET. GENERAL PRACTITIONERS.

To the Editor of THE LANCET.

SIR,—I have often remarked and admired the spirit which has ever induced THE LANCET to open its pages to observations, from whomsoever emanating, but I confess I have felt so much surprise in perusing, in the Number for the 7th of August, a letter from "Medicus" of Half-moon-street, that I cannot resist the inclination I feel to offer a few observations thereon. I am aware the style of uncourteous invective adopted by your correspondent is such, as to produce little disturbance in the minds of the class of individuals whom he so unceremoniously attempts to depreciate, and that there are few amongst them who would give themselves the trouble to contradict statements, which, if not made from interested or malevolent motives, at least evince a headstrong disregard of facts, as really existing; but, when it is known that THE LANCET has *pe-*

netrated into every society, and that its articles are quoted by many of its contemporaries, it is desirable the world should know, that in advocating the cause of the general practitioner, you have not been espousing the degraded class which some have represented them to be, and that there are those who will ever be ready to assist you in asserting the truth.

As you have so ably and temperately disposed of the question, I will offer no observations on the expediency of establishing the society, which has given rise to recent discussion in the profession; but it requires very little acumen to discover, that in advocating such a measure, "Medicus" has little regard for the welfare of those whom it concerns. The epithets of "compounder of drugs," "half-guinea accoucheur," "half-educated," "untitled," "general practitioner," savour so much of the splenetic tone of a writer, who some time since edified the ignorant, and amused the profession, on the subject of midwifery practice, that one feels disposed to recognise a close relationship, both in the style and erudition of the two authors.

I am not one of those who aim at subverting the distinctions of the profession to which I belong; at the same time, I am disposed to the utmost to uphold the honourable and useful situation which the general practitioner fills in society, resulting, as it most unquestionably does, from the influence of ability, combined with the exercise of the most amiable feelings of the heart.

The general practitioner, is a highly esteemed character in the first class of society; in the second, still more so, for there, he is the ever-welcome friend, the adviser, and the consoler; descending still further, to the indigent, it requires little trouble, in fact only a conscientious attention to his duties, to make the general practitioner beloved in administering equally, peace to the mind, and relief to the body.

It is something new, and not a little audacious in the present day, to affirm, that "general practitioners cannot be permitted to associate with physicians upon equal terms!" I never of late have known, or heard of a physician, who would not extend the hand of ready cordiality to any respectable general practitioner; it is customary to meet the general practitioner at the table of the physician, and it is equally common to see the board of the general practitioner graced by the presence of the physician; if this social intercourse results not from feelings of regard, respect, and "equal terms," it must arise from interested motives; but no, it is impossible to believe any thing so humiliating, of "the well-educated possessors of medical degrees."

I cannot for a moment believe, that Mr. Brodie has ever derived satisfaction or self-esteem, from having applied the term "subordinate," to so extensive a body of professional co-operators as the general practitioners, whose industry, perseverance, information, and research, no one is better able, and more likely to appreciate, than himself; to say nothing of the practical and pecuniary advantages derived by physicians and surgeons, from the introductions afforded them in early practice, through the medium of the "unmerited place in the public confidence" possessed by the general practitioner.

With regard to the concluding portion of the effort of genius displayed by "Medicus," I would join in it so far as to hope the general practitioners may be left "to take their own course," feeling thoroughly convinced, that as long as they persevere in maintaining their influence, by the cultivation of useful knowledge, and the general improvement of the profession by liberal intercourse, and the dissemination of individual experience, they may confidently rely on the disposition of the public, to reward their efforts by a continuance of that estimation, which it is their pride at present to possess; and further, they will always find, "physicians" of "learning," "character," and "title," who will consider they most effectually "confer dignity and honour upon the profession," by cultivating the bonds of friendship and intercourse with the intelligent portion of the general practitioners.

I have the honour to be, Sir,
Your constant reader,
APIS.

Upper Charlotte-street, Fitzroy-square.
9th August, 1830.

[Our friend JOE BURNS, on looking over the proof of this letter, declared that it was the production of a jesuit. We enforced many arguments to change his opinion, but without effect.—ED. L.]

EFFECTS OF PHTHISIS IN PARIS.

It appears from the Parisian bills of mortality for 1828, that a very striking circumstance has been developed; it has, however, been remarked before; viz., the much more frequent occurrence of phthisis among females, than among males. We find that there were 2,377 deaths of females, for 1,821 of males, being in the proportion of three to two.

THE LANCET.

London, Saturday, August 21, 1830.

THE pages of this Journal literally groan under the weight of accumulated facts and arguments, all tending to prove, most indisputably, that non-medical men are unqualified for the due performance of the important functions connected with the office of Coroner. It is not, therefore, for the purpose of adducing additional testimony in proof of the incompetency of non-medical coroners that we resume the subject on this occasion, for we are of opinion, and believe that the profession and the public fully agree with us, that there is no fact better established, in morals or in physics, than that men, not having received a medical education, being ignorant of the anatomy of the human body, and equally unskilled in the laws of physiology, are utterly incapable of conducting scientific investigations into the causes of death. How often does it happen, that even the best-informed anatomist, and the most profound physiologist, fails to discover, by a careful, minute, and laborious post-mortem examination, the particular lesion or alteration of structure, which has immediately led to the termination of the functions of life! If this be admitted, and it cannot be denied by persons who have bestowed the least attention upon the subject, how preposterous is the practice of placing in the office of coroner, men whose minds are not enlightened even by so much as the *rudiments* of a medical education! If the folly of the system were the only matter for consideration, it might well be passed over without much comment; but when we look at its dreadful consequences, the subject becomes one of the deepest constitutional importance. We have no desire, by making pointed allusions to particular occasions, to harass and distress the feelings of well-meaning men, but we ask, Has not the ignorance of non-medical coroners caused years of unnecessary misery in hundreds of families? Has it not led to the ruin of many medical practitioners, by the destruction of their professional reputation? and, worse than all, has it not immured the guiltless in the loathsome dungeons of a jail, and dragged the hands of the innocent to the felon's bar? If such deplorable evils as these were the absolute, the unalterable, the necessary adjuvants of the functions of coroner, we might submit to them without repining, but, when it is known that they all result from the disgraceful and thoughtless system of electing unqualified persons, an affair of such easy correction, one's heart sickens at the weakness and folly of human nature. Great allowance, however, is to be made for those whose duty it has been to elect coroners, their attention, until of late years, not having been directed to the appropriate and indisputable qualifications of such officers, and rarely have they enjoyed the advantage, in the appointment of them, of selecting even from a *choice of evils*; for, with very few exceptions, the evil has been *one*, unmixed, unmitigated, and unqualified.—Attorneys, practising attorneys, have been the only candidates for the office of Coroner. Scared by the talons of these grasping legal vultures, the unassuming votaries of medical science have shrunk from the encounter, and have yielded up the field, which they alone have been qualified to occupy, without a contest. Lawyers' pretensions to office are really pushed beyond all bounds; one might suppose, that the number of places already allotted to them in the state would satiate even *their* craving appetites; we find, however, that these are not sufficient, and that their demands extend even to offices which are strictly medical. It is not enough for them that they are Chancellors, Vice-Chancellors, Masters of the Rolls, Speakers and Deputy Speakers of the House of Lords—Judges of the King's Bench, Common

Pleas, Exchequer, and half a thousand other Courts—Attorneys and Solicitors General, Stipendiary Police Magistrates, Masters in Chancery, Commissioners of Bankrupts, *cum multis aliis*:—these are not enough for them, and, impelled by conceit and rapacity, they invade the province of medicine, and lay claim to an office, the duties of which are utterly incompatible with their education and habits. The loss of the emoluments of the office of Coroner is certainly not very severely felt by the members of the medical profession, but the loss of their reputation, so frequently attendant upon the proceedings of coroners' inquests is severely, is bitterly felt by them. Deplorable, however, as is this distressing consequence of official ignorance, it sinks into nothing when compared with the appalling fact, that, from the operation of the same cause, the brand of guilt is often stamped upon the brow of the innocent. The Coroner's Court, in the nature of its constitution, is one of the best institutions of the country; it is calculated, and ought, to confer inestimable advantages upon the public. The greatest Law authorities have ever spoken of this Court in terms of high commendation, and the freedom of inquiry of which it admits, has always been deemed a source of great protection to the subject. There are no technicalities, there are no fettering, unreasonable forms, the Court is opened by proclamation, and there is an invitation to all who are acquainted with any circumstances relating to the matter under investigation, to come forward with their evidence. At the same time, those who are unwilling, are compelled to appear, at the mandate of the chief officer, and the inquest, after having seen the body, may adjourn from day to day, until the most searching and satisfactory inquiry has been instituted. Satisfactory it may be to the jury who give their verdict upon the evidence; but it is by no means satisfactory, in a great number of instances, to the public, who do not fail to discover, that the presiding officer of the Court does not possess those requisites which could enable the jury to arrive at a just conclusion. A lawyer and his jury, when called upon to decide on a case of death arising from complicated injuries of the head, from obscure injuries to the viscera of the thorax and abdomen, from the effects of compound fractures, from the more remote effects of accidents; also on instances of death caused by poison, or supposed by poison, present, on most occasions, a very ludicrous spectacle; altogether unbecoming the high, serious, and exalted character of the jurisprudence of the country. As well might Sir Astley Cooper be appointed attorney-general, or Sir James Scarlett, whose description of the operation of lithotomy will never be forgotten, be elected consulting-surgeon to Guy's Hospital, as for a non-medical man to be placed in the office of Coroner.

By the death of the late Mr. Unwin, the freeholders of Middlesex have now an opportunity presented to them for displaying their independence and intelligence, by electing into the office of Coroner for their county, a person competent to the discharge of its duties. If they do not elect a man who has received the advantages of a medical education, they will have no right to complain of inefficient, irregular, and useless inquests; neither can they demur at the expenses which such proceedings would entail upon them; they might, however, deeply regret having been instrumental in the incarceration of innocent and unoffending persons. By the election of a medical candidate, these evils may all be obviated, and the advantages which the Coroner's court is so well calculated to confer upon the community may be fully realised. Attorneys are already in active canvass for the vacant office; it rests with the freeholders to determine whether these gentlemen possess the requisite qualifications. Towards them we entertain no feelings of disrespect; many of

the legal profession are gentlemen of high character and great talents; but we always have contended, and always shall contend, that they are utterly unfit to execute the important functions attached to the office of coroner. No medical gentleman having hitherto offered himself, the Editor of this Journal, at the pressing solicitations of a numerous body of FREEHOLDERS, has been induced to stand forward as a CANDIDATE; and as the office is intimately connected with the medical jurisprudence of the country, he relies on the members of the profession, in every part of the county, for their zealous co-operation and support. The cause is their own.

A GOLD medal is offered by the HUNTERIAN SOCIETY for the best Essay on "The Nature and History of Tubercular Formations;" it must be sent to the Secretary before the 1st of December. The name of the author, with a motto corresponding with the one prefixed to the essay, must be enclosed in a sealed packet. The rooms of the Society are in Aldermanbury.

THE Harveian Society of Edinburgh has decided, that the best Essay offered last year on "The Diagnostic Properties of the Stethoscope, illustrated by Dissections," was written by Mr. Robert Spittal, of the Royal Infirmary, who was, consequently, declared the successful competitor, and awarded the medal.

The subject for the prize essay, for the year 1831, is "The Proximate Cause, and most appropriate Treatment, of Tetanus." The Essay must be in the hands of the Secretary before the 1st of January, 1831. Each Essay must have a motto, accompanied by a corresponding one, and the name of the author, in a sealed letter.

Edinburgh Medical and Surgical Journal.

(Concluded.)

WE shall now apply a few cursory remarks to the "original communications" unnoticed in our last number. In the first and most lengthened we find the shades of Goodwin and Bichat debating vehemently about the last act of life, and the precise manner in which its termination is accomplished. Dr. Bostock interprets the posthumous controversy for the benefit of the Blue Journal, but, taking into consideration that both the disputants have passed the river of ghosts, it annoys us much to find how little additional information on the subject they have been enabled to procure for their physiological survivors. While Goodwin maintains that death takes place because black blood cannot excite the left ventricle of the heart to its due contractile exertions, Bichat on the other hand asserts, that death ensues from the penetration of the substance of the heart by venous blood conveyed through the coronary arteries. Such is briefly the statement of the question; the arguments on either side are re-arranged by Goodwin in the present communication; we say re-arranged, because the author brings forward no novel or additional fact in support of his opinions, but, after accusing Bichat of mistating his doctrines, he then proceeds to repeat them in more detail, and in their support lays his most emphatic stress upon an objection to Bichat's theory, which the French anatomist with his usual sagacity foresaw, and with equal dexterity attempted to evade.

"If it be true, as Bichat asserts, that the left auricle and ventricle cease to contract in asphyxia from suffocation, because the black blood, carried by the coronary arteries to the muscular fibres of the heart, penetrates and weakens these fibres, and thus renders them unable to contract, it should follow, that in order to renew these contractions again, some florid blood must be sent into these arteries to restore the lost strength of these muscular fibres, and thus enable them to contract again; but the only means we have of sending blood into these coronary arteries, is by the contraction of the left ventricle, which, on Bichat's hypothesis, is now not able to contract, and hence it must appear, that when the contractions of the left auricle and ventricle have ceased in the asphyxia from suffocation, it will be impossible to renew them again."

Now how does Bichat meet this objection?

"The florid blood," he says, "in this experiment, penetrates the fibres of the heart, and removes the weakness occasioned bythe contact of black blood;" and then adds, "that he does not believe any person could resuscitate the motions of the heart when they have once been destroyed by the contact of black blood: for in order that the florid blood should vivify the heart, it must penetrate its fibres, and if the auscultation has ceased, how can this be brought about?"

To any well-ordered and logical mind, the sophistry of this flimsy evasion must be painfully manifest; how the egotism of controversy could so obscure Bichat's memory, as to render him forgetful of the mode of resuscitating the apparently drowned, or of the phenomena he himself had so often witnessed in his experiments in restoring asphyxiated cats to the full exercise of respiration and life, we are entirely unable to comprehend. On the whole, though many difficulties yet remain to be decided, Goodwin has the upper hand in the present controversy; and though the paper, we have little doubt, will prove nearly as full of interest to the majority of the readers of the "blue," as Paul Pry's article in three columns on an "enormous gooseberry," yet it tends decidedly to prove, that faith and fashion have contributed no trifling share to the implicit confidence which Bichat's doctrines have so generally enjoyed.

Two cases of hare-lip are next related by Mr. Dewar, of Dunfermline, doubly remarkable for their entire resemblance to each other, and for the mother of the younger child, while pregnant, having constantly held in her mind's eye the image of her neighbour's deformed offspring. This strange coincidence Mr. Dewar does not pretend to unravel; but he forgets to inform us whether it is within the bounds of possibility, that the rights of paternity may be referable in both cases to the same individual. Such things will now and then happen, and explain most naturally as mysterious "*coincidences*" as that which Mr. Dewar describes.

Dr. Corrigan contributes the 6th article, on the diseases and weather of Dublin. With his usual correctness of manner, he makes the most of a few trifling cases, none of which are of sufficient interest to be transferred to our columns. The next communication is from Dr. Renton on the effects of acupuncture, in which he narrates many striking cases of rheumatism cured by the operation of this remedial agent. He speaks with great confidence of its powers, and expresses his belief of its utter freedom from danger as far as the operation is concerned. We must observe, however, that we have seen acupuncture repeatedly fail, even in cases strictly analogous to those Dr. Renton mentions; and with reference to the safety of the operation, there is a case in Bartholomew's at this moment, in which permanent contraction of the biceps and flexors of the forearm and fingers, has supervened on the breaking of a needle in the palm of the hand; now, that such an accident may happen during the operation of acupuncture, cannot be denied; and if it does not weigh against the practice, it should at least influence the degree of caution with which its manipulation should be conducted.

We have now noticed all the original articles, with the exception of two cases of malformation briefly described by Dr. Campbell, and a case of phlegmonous erysipelas successfully treated by the nitrate of silver, by Mr. Hodgson, of Carlisle, neither of which demands either censure or approbation. We shall now proceed to the third division of the work, noticing, as we pass, a precious fragment of medical criticism which occurs in the editorial review of the recent works by Tate and Addison on hysteria, Blue Journal, p. 201.

"The hypothesis now stated, nevertheless, is not free from objection; Mr. Tate, for instance, finds the dorsal vertebræ tender on pressure, or the use of the hot sponge, and seems to infer, for we are not permitted to say that he does infer, like Mr. Teale, that this indicates irritation of the spinal nerves and their origins. Now though we did not choose to object to Mr. Teale, that he could not recognise the state of the spinal chord through the spinal muscles, the bones, and the membranes, and though the test now alluded to can only indicate the state of the periosteum and the outer part of the spinal plates, we must now say to both authors, that this method is totally inadequate to ascertain the condition of the spinal chord and its nerves; and whatever success may have attended the remedies employed (namely, the friction of the tender portion of the spine with tartar-emetic oint-

ment), the result cannot be admitted as a proof of the accuracy of the diagnosis."

There is not in the entire Journal so flagrant a display of ignorance of the practical art of medicine, as is contained in the passage above quoted. We will not ask the reviewer whether he ever read Abercrombie or Lallemand, for this we take for granted, at the same time allowing him the credit of forgetting all that was interesting in the works of these celebrated authorities on cerebro-spinal disease; but is it possible that he is unacquainted with the fact, that circumscribed and continued tenderness of the scalp is one of the most certain indications of organic cerebral disease. Of this we have ourselves seen numerous examples, and we may refer the Editors to the report of one of Dr. Graham's clinical lectures for an instance of the same kind. We have also witnessed the symptoms alluded to in a case of paralysis of the lower extremities, depending on disease of the spinal chord, and totally unconnected with the bones, muscles, periosteum &c., as was proved by the post-mortem examination. Really, before the reviewer started his objections, he should, for his own reputation, have examined the subject with rather more attention.

We now turn to the third division, of which we shall only examine that part which relates to medical jurisprudence. The first item under this head is a report of a trial in Paris, for attempt to murder by administering nitric acid, extracted from the Archives Gen. de Médecine, and commented on by the Editors. The evidence of circumstances, as unravelled and elucidated by MM. Olivier and Chevalier, procured the prisoner's condemnation. The principal point, however, we wish to advert to, is the chemical analysis by which the attempt was made to particularise the acid employed.

"The stains on the clothes were analysed in the following manner:—Litmus paper was strongly reddened by them. When a portion of the stained cloth was immersed in distilled water, the water became acid, and when this was neutralised with the bicarbonate of potash and concentrated, a piece of paper immersed in the solution and dried, burnt with a sparkling redness like match-paper. Another portion of the liquid evaporated to dryness, and projected on burning charcoal caused deflagration. The stains on the skin and hair were submitted to the same process, and gave the same results. A portion of the yellow stain, when treated with caustic potash, became reddish-yellow. These experiments left no doubt that the stains on the body and clothes were caused by nitric acid."

We have here ample evidence of the application of a *corrosive acid*, but what that acid was, the experiments did not determine, for there are many acids besides the nitric, which form with potash a neutral salt, which deflagrates when heated with combustible matter; and as for the indications afforded by the fumes produced on the effusion of sulphuric acid, it was utterly valueless, since these fumes were submitted to no examination as to their chemical nature. With reference to this subject we may direct the attention of our readers to Dr. O'Shaughnessy's papers in Nos. 353 and 355 of this Journal, and to a communication from him we insert in this day's publication.

The following notice is so extremely interesting that we shall quote it at length; it exemplifies admirably the valuable assistance which chemistry affords in the development of medico-legal investigations. Had the accident occurred before Orfila reduced toxicology to a science, it is more than probable, that the unfortunate pastry-cook would have been condemned as a felon and sent to the guillotine. The statement of the case and the chemical evidence are worthy of the deepest consideration, and afford to the medical world a practical lesson of the most valuable kind.

ON THE POISONOUS EFFECTS OF CERTAIN SPOILED ARTICLES OF FOOD.

It is well known that certain articles of food have been frequently observed on the Continent to acquire poisonous qualities of a peculiar kind, and in a way which chemists and physicians have not hitherto been able to explain very satisfactorily. Among these articles the most frequent are a peculiar variety of sausage, and a particular kind of cheese used in Germany; but both in France and Germany, bacon and ham have been also several times found to acquire poisonous qualities analogous to those which characterise the sausage-poison and cheese-poison. A very elaborate inquiry into an accident supposed to have arisen from spoiled ham has just been published by M. Ollivier in the Archives Générales de Médecine. His investigations set completely at rest the common notion that such cases arise from the accidental impreg-

nation of the meat with metallic poisons; but he has not succeeded in discovering the real cause.

In the instance which gave rise to his investigation, the master of a family purchased a ham-pie at a pastry-cook's in Paris, and the whole family ate the meat of the pie the same day, and the crust on the following day. Three hours after dinner the master of the house was seized with general uneasiness, followed by cold sweats, shivering, violent pain in the stomach, and frequent vomiting; then with burning thirst, extreme tenderness of the belly, so that the weight of the bed-clothes could scarcely be borne, profuse purging, and colic of extreme violence. His daughter, twenty-seven years of age, and a child nine years old, were similarly attacked. A physician, who was called to their assistance soon after they were taken ill, drew up a minute report of the symptoms in each of his patients, and declared that they had a violent inflammation of the stomach, which he was inclined to ascribe to natural verdigris, or the carbonate of copper having been communicated by the pastry-cook's moulds. In a few days all the three individuals recovered under an antiphlogistic treatment. About the same period several accidents of the like nature occurred among the customers of this pastry-cook; and, in consequence, a judicial investigation was ordered. The shop being properly inspected, it was found that every operation was conducted with due attention to cleanliness. MM. Ollivier and Barruel were appointed to analyse the remains of the meat which produced the cases first mentioned, as well as the alvine discharges of the child.

The alvine discharges had a leek-green colour, and were not fetid, but of a sour smell. Sulphuretted hydrogen did not induce any change in colour, neither was any change of colour produced by the same reagent after the fluid was filtered. The remains of the pie had become mouldy. The meat and paste were separately examined. The contact of sulphuretted hydrogen did not produce any change of colour in either. When they were incinerated in a crucible, and the residue treated with diluted nitric acid, the filtered liquid on being neutralised with ammonia did not give any precipitate with ferrocyanate of potass, or with sulphuretted hydrogen, and did not become blue with ammonia. Another portion of the remains of the pie was treated with alcohol and a few drops of acetic acid, and the alcoholic solutions were evaporated to the volume of half a drachm. The residue was agitated with four times its volume of distilled water, filtered and evaporated, and dissolved again in water. This solution was not affected by sulphuretted hydrogen or by nitric acid. These experiments furnish ample proof that the pie did not contain a trace of arsenic, copper, antimony, or lead. The only conclusion, therefore, which M. Ollivier conceived it possible to draw was, that the ham had, in some way or another, acquired the poisonous properties sometimes remarked in German sausages, cheese, and ham.—*Archives Générales de Médecine, Fevrier* 1830.

With these extracts we are compelled to close our observations. With the Journal and its contributors, it may be seen, we have dealt with an equitable hand, neither having spared deserved censure, nor lavished unmerited applause. From this abstract, given as it is with the utmost impartiality, our readers will be enabled to form an adequate opinion of the present character of the Journal, and they will, perhaps, be inclined to agree with us in the belief, that it has lost much of the vigorous and scientific tone by which it was distinguished under its former directors.

A Supplement to the London, Edinburgh, and Dublin Pharmacopœias, &c. &c.

By D. Spillan, M.D., &c., &c., Dublin, Hodges and Smith, 1830. 12mo. pages 218.

This work consists of three entirely distinct parts, 1st, An Exposition of the Atomic Theory; 2nd, An Account of the Method of Preparing certain Medicines recently introduced in France; and lastly, A Treatise on the "Action of Medicinal Substances on the Living System," with some observations on the Art of Prescribing, and a List of Medical Prescriptions. The first of these, as we have already had occasion to observe, when speaking of another somewhat similar work, appears to us to be rather out of place in any but a professed system of chemistry; for, as, on the one hand, the Theory of Chemical Equivalents must be unintelligible to any one unacquainted with chemistry, so, on the other, it is very improbable that one who is even moderately instructed in the science, will require to seek for information on so important a part of it, in a work like this. Besides this objection, the "Exposition" is liable to another very serious one, that of being less simple and intelligible than any which we have met with, so that we are convinced that, to the

majority of medical students in this country, it would be at all events utterly useless.

Of the second part we cannot speak much more favourably; it is certainly not better than the translation of Magendie's formulary, and its utility must necessarily be greatly diminished by the confusion of the old and new French, and the English weights and measures, litre and gramme, livre pinte, and once, pound, ounce, dram, and grain, being used indiscriminately, and sometimes all three denominations occurring even in the same prescription. One or two not very trifling errors also are to be met with in it; for instance, iodine is stated to be, in its natural form, "combined with hydriodic acid," instead of "combined with hydrogen in the form of hydriodic acid," &c.

The third part is very far superior to the other two, especially the general or preliminary observations, every word of which well deserves an attentive perusal; but even here we have to complain of great negligence; two of the classes under which medicines are arranged, and which are enumerated at the beginning, viz., temperants and narcotics, being afterwards entirely omitted, although the latter are certainly of the greatest importance.—Nor is there the least notice taken of the action of mercury, or of those medicines usually termed antispasmodics, which, though tacitly included we presume in the class of "stimulants" or that of tonics, might well have deserved an especial consideration. Independently of these omissions we have not the least fault to find with this part of the work, which, we may repeat, is in other respects most excellent. It appears, however, that little credit is due to Dr. Spillan on this account, for though he states that, in "compiling the work the first authorities have been *consulted*, more particularly the valuable and scientific articles on therapeutics, by M. Barbier, in the Dictionnaire des Sciences Medicales," it is pretty evident, both from the style and matter, that he has not done much else than translate from this writer, adding little or nothing of his own.

ALDERSGATE STREET SCHOOL.

MR. KING.

At a Meeting held this day in the theatre of this establishment, by those pupils now in town, Mr. Joseph May in the Chair, it was resolved unanimously,

Moved by Mr. S. P. Webb, seconded by Mr. Hillier,

That, in consequence of the much-regretted retirement of our talented, communicative, and highly-respected teacher, Mr. King, this Meeting feel themselves impelled by gratitude for the most weighty obligations, to present that gentleman with their sincere, though humble thanks, for the liberal manner in which, without partiality or reserve, he has imparted his valuable instruction.

Moved by Mr. Law, seconded by Mr. Bidding,

That, as the great majority of those who reaped the benefit of his instructions (and who will envy us the luxury of our feelings in paying even this small tribute to one so justly respected by all) are now at a distance from London, it is expedient that a Meeting be called by advertisement in THE LANCET, to be held on Wednesday, the 27th day of October, to take into consideration the means of presenting Mr. King with some more permanent proof of their gratitude and attachment.

Moved by Mr. Law, and seconded by Mr. Barrow,

That Mr. Blair be requested to perform the duties of Secretary, and receive communications from such of the late anatomical students as may not return to town during the ensuing session.

August 16th, 1830.

ANALYSIS OF A SUSPECTED STAIN BY NITRIC ACID, WITH OBSERVATIONS.

By W. B. O'SHAUGHNESSY, M.D.

On the 14th of July last, I received a letter from a respectable practitioner in the South of Ireland, enclosing me a corroded fragment of drab cloth; he stated, that it was part of an outside coat, which had been folded up during the previous summer months, and which, on being opened out, was found corroded in small patches, in two or three situations. The servant being suspected and accused, attributed its destruction to moths, with which the house was abundantly infested.

The fragment of cloth was about an inch square, and was *unaltered in colour* round the margin of the corrosions; on being moistened with distilled water, it tasted

acid, and reddened litmus paper; it was then agitated in a stoppered phial, with ʒij of distilled water, and a solution of caustic potash added, till litmus paper was no longer reddened. Three drops of this solution were then placed on a bit of glass, apart from each other; one was touched with a thin glass rod moistened with the nitrate of barytes, the second with the nitrate of silver, no precipitate took place in either instance, and thus the absence of sulphuric and muriatic acids or their salts was satisfactorily proved.

After filtering the solution through a small glass funnel, the throat of which was obstructed by a pellet of lint, it was then evaporated to dryness on a watch crystal, when a white saline crust remained which weighed 1/4 of a grain. The lint, when dried and touched with a lighted taper, burnt slowly like match paper or moxa, indicating that the salt which passed through it in solution, was either a chlorate or nitrate of potash. To determine this point, the saline residue was carefully scraped together, and placed in a minute drop of pure diluted sulphuric acid on a fragment of white porcelain; on dropping a particle of morphia into this, a brilliant vermilion stain was immediately produced, which afforded a beautiful contrast with the pale surface of the porcelain beneath. Decisive proof was thus afforded of the corrosions having been produced by nitric acid. The rationale of the last experiment, however, requires explanation: on placing the particle of nitrate of potash in the dilute sulphuric acid, sulphate of potash is formed, and nitrous acid expelled, which immediately produces its beautiful and characteristic effect on the morphia. In repeating this experiment, it is also essentially necessary to use white porcelain, since it is not acted on by the dilute sulphuric acid, and the production of the vermilion stain is thus rendered much more striking than it could be by any other mode of proceeding.

I am induced to publish this case, by the conviction that no other mode of analysis could possibly procure satisfactory evidence of the nitric acid in such extremely minute quantities; in fact, the morphia test, applied in the manner I have just described, will indicate a quantity of nitre, which is barely perceptible to the naked eye, and which would not indicate, in the nicest balance, the two-hundredth part of one grain. The case also affords the best commentary I could apply to the following notice of my first paper (The Lancet, No. 353), which appears in the last Number of the Ed. Med. and Surgical Journal.

"Some important observations have been lately made by Dr. O'Shaughnessy on the tests for nitric acid. He finds that Liebig's test for this acid, in a free or combined state, which has been introduced into almost every chemical work published since his announcement of it, is so open to fallacy, that no reliance can be placed on it in any medico-legal inquiry. - - - - He likewise makes some objections to the use of the test derived from the deflagration of combustible substances with the neutralized acid, and even to that derived from the action of the acid on certain metals, such as tin or copper. As to the latter test, we do not exactly see that it is liable either to fallacy or any difficulty in the mode of applying it."

I never supposed that the action of nitric acid on these metals was liable to fallacy, if the experiment were properly conducted, and the properties of the gas evolved submitted to the strict examination necessary for the support of positive testimony; but my principal objection to that test is, that it requires for its demonstration the free and concentrated acid, and of that a quantity which would show the morphia test five hundred times; further, what is of greater importance, it is inapplicable to the nitrate of potash. On the whole, I believe, that no other test than the morphia is necessary, and unless I obtained a quantity of the pure acid, I should not take the trouble of seeking further confirmation; but if the free acid were obtained *in sufficient quantity*, I would then apply to it the tests of the metals, and those I have described in my first communication.

August 16th, 1830.

CASE OF

AFTER-HÆMORRHAGE

IN COMPOUND FRACTURE OF THE LEG.

By Edward Moore, *M.D., Mem. of the Roy. Med. Soc. of Edin., Surgeon to the Plymouth Eye Infirmary, &c.*

On perusing Mr. Lawrence's 52nd lecture, in No. 352 of The Lancet, I perceive the following observation regarding compound fractures of the leg. Speaking of hæmorrhage, after accidents of that nature, he says, "You perhaps may not be aware of the occurrence of any injury to the vessel immediately after the accident, but you may have hæmorrhage coming on at some distance of time." It affords me considerable pleasure to be enabled to illustrate any observation of my esteemed preceptor; and you will do me a favour by inserting in your Journal the following case, bearing on the above point.

Case. Oct. 11, 1829. S. B., aged 18, a healthy young man, in attempting to explore a limestone quarry, at a place called Cat-

down, about a mile from this town, lost his footing, and fell a height of forty feet; he was conveyed in a state of insensibility to a house in the vicinity; being called to see him, I found he had soon recovered his senses, and now complained of severe bruises about the body, and inability to stand; he had a cut over the left temple, two inches in length, not denuding the bone; a cut on the elbow, another on the groin, and several bruises in different parts; but the chief injury was a compound fracture of the left leg, about two inches above the ancle; the tibia had passed through the skin, the stocking, and even a *loose* pair of trowsers, which had been confined by a strap under a laced boot; these being removed, I found the tibia protruding about two inches, and lying on the skin of the inner ancle, completely denuded of periosteum, and the foot turned to an obtuse angle with the leg. Finding that moderate extension would not wholly reduce the bone, I had him placed on a shutter, and conveyed to his residence in the town, where, assisted by Mr. Luscombe, I still could not reduce the bone by considerable extension. As it became necessary to enlarge the wound, or saw off the bone, I preferred the latter, partly because the extremity was obliquely divided and very sharp, and partly because the periosteum had been wholly detached from the entire cylinder for at least two inches; accordingly I inserted a spatula under the bone, and sawed off about three quarters of an inch; after which it was reduced, some small fragments removed, the wound dressed, and the limb laid in a fracture-box; there had been considerable hæmorrhage on his way home, but it did not afterwards proceed to any extent; he went on well till the 26th, when, as he complained of the fracture-box, I carefully removed it, and placed him in Hagedorn's splint (an apparatus in which the sound limb is fixed to a long splint reaching from the foot to the pelvis, to which it is attached by a strap, having a foot-board, to which both feet are secured); this enabled me easily to dress the wound, without disturbing the leg; he went on very well till the middle of November (four weeks), when the wound, which had nearly healed, began to assume an unhealthy appearance; the parts around became œdematous; an abscess formed on the outer side of the leg; the pulse became exceedingly rapid and weak; night sweats and hectic flushes appeared; these symptoms were slightly mitigated after opening the abscess, and some medical treatment, but did not wholly subside. On Nov. 16, he was seen by Dr. Butter and Mr. Derry, as I had some doubts, from the increasing state of the hectic symptoms, of being able to save the limb; but as the patient was young, it was determined for the present to delay any intention of amputation. Late on the following evening I was suddenly called to him, as there was a considerable oozing of blood through the dressings, accompanied with unusual distention and pain in the limb, which, he said, had awoke him, and he supposed he must in some way have started in his sleep. I instantly removed the dressings, and found the abscess and wound completely filled with coagula, and the blood, still dropping, was evidently of an arterial nature; by the time my two friends had arrived, the application of wet cloths had arrested the bleeding, and it was determined to persevere with them, unless fresh hæmorrhage should render other means necessary; he passed a tolerable night, and the wound was dressed as usual; but the skin over the abscess became hot, red, and painful, to which, in the evening, I applied a poultice, and the next morning (18th) a great quantity of pus and dissolved blood was discharged from the opening of the abscess. On the 19th, shortly after dressing, the hæmorrhage returned in the same manner as before, and was again arrested by wet applications. Partial oozings continued till the 23d, and the patient was now visibly declining. On attempting to raise the foot, an evident bending took place at the wound, a probe passed easily between the bones, the discharges were sanious, the tibia was bare, and it was clear that union had not taken place. Since the source of the hæmorrhage was uncertain, and the anterior tibial artery could be traced over the foot, it was determined not to make any attempt to seek for the vessel, but to accede to the patient's request, to have the limb removed next day; however, about noon the hæmorrhage returned more violently than ever, and it was evident, from the appearance of the patient, that amputation must be performed *sur le champ*. Accordingly, assisted by a few friends whom I could hastily summon together, I removed the limb in presence of Dr. Butter, Dr. Rendle, Messrs. Derry and Square.

On examination, we found that a considerable quantity of osseous matter had been thrown out from the ends of the bone, but the part denuded of periosteum was still bare, and had begun to exfoliate near the edges. On injecting the vessels with water, it flowed out at the wound from the anterior tibial artery, and to this vessel was found attached an aneurismal sac about the size of an almond, which had been torn by a spiculum of bone projecting from the lower portion of the tibia, and which I have no doubt had been the original cause of the wound in the artery at the time of the accident; the sac itself was thin, of a dull-red colour, and easily lacerable; the opening from it into

the vessel was oval, smooth, and rounded at the edges, and easily admitted the blunt end of a probe. We perceive that the statement made by Mr. Lawrence is hereby confirmed; and, in this case, hæmorrhage occurred so late as five weeks after the accident.

The patient, after the first few days, went on very well; the wound healed favourably, the young man regained his health and spirits, and is now gone to his friends in London.

Plymouth, August, 1830.

AN INQUIRY

INTO THE CIRCUMSTANCES WHICH HAVE BROUGHT INTO DISREPUTE THE

OPERATION OF FIRING

For Lamenesses of Horses, with an improved method, and suggestions for its admission into Human Surgery.

By Mr. JAMES TURNER, *Veterinary Surgeon.*

"MONSTROUS presumption!" I expect will be the exclamation that will head the reply to this letter. Should you, however, Mr. Editor, be disposed to give it a place in your far-famed Journal, viewing the communication merely as a veterinary subject, I think the majority of your readers will be content to smile at it as a novelty, although the more grave portion may be angry, and, perhaps, reprove me for temerity.

That I may plead some shadow of excuse for thus addressing you, permit me to state that my whole time and thoughts have been occupied in endeavouring to cure sick and lame horses from my earliest days, and having gained experience by a long practice in a hunting country (viz. Surrey, notorious from its hills and flints for incapacitating the limbs of horses), it has followed that lamenesses, arising from diseases of *joints*, have demanded of *me*, and received, the most sedulous attention.

The difficulty of establishing a radical cure after the interior of a joint has suffered such violent contusions as are consequent upon hunting over a rough country, is well known, and has induced or rather compelled me, to *venture* farther with that veterinary instrument called the *firing iron*, than the generality of practitioners, having pushed the actual cautery to greater extremities, in contra-distinction to that method which is commonly known by the term *superficial* firing.

Now the latter is the generally approved mode, and consists in drawing lines in the skin at certain distances from each other with a red-hot iron, about half or three parts through the common integuments. Most of the veterinary authors of the present day reprobate the practice of passing the instrument entirely through the skin. Vide the 14th edition of Mr. White's popular work on the Diseases of Horses; in his *Compendium* for the treatment of diseases, page 310, he remarks, "The skin should never be penetrated; but the cuticle should be destroyed, and a dark-brown impression left on the skin."

Again, Mr. Percival's Veterinary Lectures, 1st volume, page 358, on the treatment of spavin, this scientific writer observes, should the ordinary means fail, "firing may be had recourse to, but not deep firing." Also Blaine's Outlines of the Veterinary Art, 3rd edition, page 672. This intelligent author is particularly cautious, and limits the operation to the cuticle. Among the old writers on this subject, I observe that the celebrated Osmer forbids penetrating the skin. Both the Professors of the Royal Veterinary College of London have cut this matter much shorter, and nearly extinguished the *fire* altogether, having repeatedly pronounced it a "useless operation."

My desire is to see the "Phœnix rise from its dying ashes," therefore will attempt at showing the causes which have led to the failure and abandonment of the *firing* operation, regarding it as one of our chief resources in effecting *cures*, and therefore indispensable to veterinary surgery.

I am well assured the eminent and highly-talented professors of our national institution are sincere when they inculcate that other remedies are preferable to the firing iron; they are themselves deceived; having taken notice of the College practice of firing ever since the year 1810, I am well aware that they have fired only *superficially*, and studiously avoided cutting *through* the common integuments, they have therefore experienced a succession of disappointments, and consequently have lost faith in the operation. This being the impression at the Royal Veterinary College itself, it is not to be wondered that a corresponding effect should have been produced on the public mind, and the result is, that a very strong prejudice exists at this moment *against* the operation of *firing* in horses, particularly in the metropolis, but it is still upheld in the country as indispensable by post and coach masters, and most sporting men who ride the top pace to hounds.

I am quite certain that the professors have given to the public a candid and honest opinion, experience having likewise shown me in too many instances, that superficial firing (that is, where the skin is not com-

pletely cut through with the instrument) is not one jot more efficacious than a common strong blister.

Vewing the other method, my practice in firing of horses has convinced me, that the *success* of the operation, *if performed for the removal of lameness*, where the ordinary means have failed, whether situate in a joint or a sinew, depends solely on making each separate line or incision, from end to end, completely *through the skin* or common integuments, *cutis* as well as cuticle, and boldly exposing the cellular tissue, forming the immediate covering of ligaments, tendons, periosteum, &c.; with all due caution, of course, not to pass the instrument so near as to wound or sear these important structures. When the part operated on happens to be the inside of the hock, a case of spavin, for instance, all the dexterity, tact, talent, and *nerve* of the experienced practitioner will be in requisition; for while he strenuously exerts himself amid the struggles of his patient, he revolves in his mind the absolute necessity of his instrument reaching the surface of the disease itself; and yet, on the other hand, he has to consider the paramount necessity of avoiding a puncture of the capsule of the joint.

With respect to the rationale of this method of firing, the kind of instrument as to shape, size, &c., the great variety of cases for which it is applicable, together with the fore-and-after treatment of the patient, I have as much to remark as would fill a volume, and which I purpose, ere long, to submit to the public. But I deem it necessary to state, that although my brother, Mr. Thomas Turner, Veterinary Surgeon, of Croydon, and myself, have practised these deep cautery incisions successfully for a series of years, we have never allowed that success in a single instance to entice us off our guard, by venturing to perform this operation so far from home as to preclude the possibility or convenience of almost daily watching our patient, and therefore, by never having allowed that sturdy opponent, "inordinate inflammation," to have gained a day's march on us, we can defy the world to say, that a single mishap has occurred to us from the severity of the operation, such as an opened joint, or a fatal termination from excessive irritation or constitutional disturbance.

I fear, Mr. Editor, your patience is exhausted; but I have now only just arrived at the burden of my story, therefore I will come to the point by asking you, whether it is your opinion that this *deep* method of firing, as above detailed, may some day or other become admissible in the surgical treatment of human beings for many of those intractable scrofulous inflammations of the synovial membranes of joints, commonly called white swellings of the knee, hip-joint cases, &c.?

Of course I cannot pretend to any knowledge whatever in such matters, only that I have been led to think on them from having carefully perused those splendid yet plain lectures by Mr. Lawrence. In the treatment of ulceration of the cartilages of joints, Mr. Lawrence remarks, page 485 of Vol. II. of THE LANCET, that your "great reliance must be on counter irritation," and that in the days of Hippocrates, the same principle was employed by the application of the actual cautery, and that Professor Rust, of Berlin, considers the hot iron as more efficacious than other means of employing this principle.

Now, Sir, I humbly suggest, that if such desperate cases have derived benefit from the days of Hippocrates down to Professor Rut's time, by only cauterizing or searing the *surface* of the skin, how much more may be expected by making numerous crucial incisions *through* the skin with the actual cautery, occupying a surface of integuments by these lesions, somewhat more extensive than the disease is supposed to occupy within the joint, thereby creating artificially a counter disease truly formidable, but yet controllable.

If had recourse to in the *earliest* stage of the disease, I entertain an idea that the patient would experience instant relief by the *bold and free incisions releasing the capsular ligament from the pressure of the integuments*, the bare circumstance of putting the patient out of pain by removing tension during the period of the acute stage, might ward off the chronic form of the complaint, in more *suddenly* arresting its progress, than the operations of leeching, purging, fomenting, &c.

I will not presume any further on the subject, but as I am reasoning from analogy only, I must beg to add that I have also practised these *cautery lesions* upon hounds, for a disease which huntsmen call the stifle joint lameness, usually with success, and never with the supervention of any disastrous circumstances.

Horse Infirmary, 311, Regent Street, Aug. 14th, 1830.

CASES OF LIGATURES TO LEECH-BITES.

By GEO. YEATES HUNTER, *Esq.*

THE subject of troublesome bleeding from leech-bites, has been often referred to in your valuable Journal; the several methods of restraining it have been mentioned, and at least one case of fatal hæmorrhage has been recorded. I confess that I smiled at these accounts, because in a tolerably extensive

practice I had never failed to suppress the bleeding, however violent, by pressure over a piece of dry lint, twisted to a hard point, and inserted between the lips of the bite; but on Thursday, the 16th ult., I found this mode for the first time unsuccessful in the case of an infant, to whose neck I had ordered leeches to be applied for an attack of laryngitis; the nurse of this infant ineffectually endeavoured to stop the bleeding, and at the end of six hours I was sent for, when I still found a copious flow of blood from one of the bites, and after careful and persevering pressure for nearly two hours, it remained unabated. I therefore seized the bleeding orifice with the thumb and fore finger of the right hand, the nails of which were an excellent substitute for forceps, and extending the integument, I directed the nurse to apply a silk ligature around them, and when this was sufficiently tightened, the bleeding of course immediately ceased; the portion of skin combined was in size as much as a large pin's head, and the following morning the ligature came away, when the little patient was well.

This morning, about three o'clock, I was called to a child to whose abdomen leeches had been applied late the preceding night, for diarrhœa, attended, as I believe, with inflammation of the mucous membrane of the intestines; and in this case considerable bleeding had continued up to the time of my arrival; a ligature was therefore applied as in the first case, with a similar successful result. As I am not aware that this method has been described before, and as it is more simple and quite as *elegant* as any which has been suggested, you will perhaps think it proper to give this hastily-written letter a corner in your widely-circulated hebdomadal publication.

Margate, July 26th, 1830.

EXCISION OF A CONGENITAL TUBERCULOUS TUMOUR OCCURRING IN AN INFANT.

Reply of Mr. Tripe to Mr. J. Williams.

To the Editor of THE LANCET.

SIR,—If Mr. John Williams and his medical friends, and the gentlemen associated with me in the operation performed upon Mr. A.'s child, were as well known to all your readers as we are in this town and neighbourhood, I should not deem it necessary to notice the letter of that person, inserted in THE LANCET for July 10, page 583, commenting upon my communication which appeared in your number of the 23rd of January, page 375. It is unfortunate for Mr. Williams, that, after six months of unwearied industry, he could not induce either of the gentlemen to whom he alludes, to become instruments for the gratification of his malice; and it is rather hard upon him that he should therefore be compelled to change the character of a *convert* (his habitual mode of warfare), for that of an open assailant, particularly as, from his own account, it appears that he *never* saw the case, nor had any *personal knowledge* of the matter on which he writes; but ventures to arraign it upon the statements and opinions, which he *says* he has received from others. He does it too, he declares, in direct opposition to his wishes, to keep alive the popular excitement; and very logically offers, as a proof of his sincerity, that he has refrained from heaping on the inflammable and combustible materials contained in his letter, until time had nearly smothered the imagined flame.

When I first saw the infant which forms the subject of the case, it was under the charge of Dr. Glasson and Mr. Watson, who had applied a tight roller over the tumour, with a view to its absorption; and, had that failed, they contemplated other treatment; and hinted at puncturing it. Mr. Lower, who saw the case immediately after this, designated the tumour a tuberculous sarcoma; and reasoned upon the danger of puncturing it—dwelt upon the malignant nature of such growths; and, for a confirmation of his reasonings, quoted a case from Mr. Abernethy's Surgical Essays which had terminated fatally after such treatment. Your readers will find that case recorded at page 94. The facts of it were these:—A tumour of a tuberculous kind was excised from over the lower part of the pectoral muscle, which operation, by excision, was cured *without difficulty*; but two tubercles having subsequently formed in the site of the former disease, and Mr. A. being unwilling to subject his patient to the pain and inconvenience of a second operation by excision, punctured the superior tubercle; this treatment was *immediately* followed by inflammation, and extensive ulceration, and the case terminated fatally in about a week.*

* Dr. Isbell and Mr. Watson were present when Mr. Lower expressed his opinion as above stated; Mr. Watson also was present at the consultation, when these, as well as all the other material points in my statement, were referred to; it being deemed right that all the opinions, &c., which had preceded, should be introduced, for the candid and perfect consideration of the case. Mr. Watson did not, on that occasion, take a single objection to any thing which was so introduced; but was in perfect accordance upon every point submitted for decision, with one exception only, hereafter referred to. The consultations collectively, and indi-

Mr. Williams appears to have fabricated for these gentlemen opinions and declarations upon which he grounds the strength of his letter. However this may tend to his own gratification, it certainly evinces no great regard for the interests of his friends, and will add little to the opinion previously formed of their intellectual calibre. For, supposing all that he has attributed to them to be true, it has nothing at all do with the real merits of the case, and is so opposed to their own premises, as necessarily to involve them in what, in logical phraseology, I think, is denominated "reductio ad absurdum!"*

The tumour has been described as composed of tubercles of different degrees of density, from the serous cyst up to the sarcomatous organisation. In the description, therefore, may be recognised a species of disease, linked in close affinity to that formidable chain of malignant growths, which, *most commonly*, have their origin in the cavities of the body, and then spread and enlarge themselves to a frightful extent, going on increasing until death alone, which in such cases is certain, arrests their further progress. Those who have had the greatest experience in diseases of this kind, and have had opportunities of investigating them after death, are best informed, not only of the *certain*, and sometimes *rapid* increase of such morbid and malignant growths, but also of the manner in which they spread themselves by absorption.†

The risk, to be incurred by delay, of the surrounding parts becoming contaminated by the cancerous-like virulence pertaining to this disease, and the probability of the tumour extending itself *imperceptibly* at its base, so as to place the case beyond the reach of remedy, by an operation or any other means, were cogent arguments in favour of an immediate and entire removal of the parts; and the success anticipated by such a proceeding was only measured by the state of *quiescence* which might exist in the tumour at the time of the operation. Any disadvantage there might be in operating on a child so young, was, in this case, considered counterbalanced by the advantage which the above reasoning inferred; and the many and important operations upon infants, which have been performed successfully by the ablest surgeons in the kingdom, afford proofs of their physical powers in sustaining, and extraordinary reparative energies subsequently, that no theory or sophistry can annul.*

That the decision was founded upon a correct and scientific judgment of the case, there are few men of established professional character who will dispute: hard indeed would be the fate of the profession, if they were held accountable for the successful termination of every case in which they are called upon to operate; and few would be found professing the hardihood to encounter the fearful risk: all that can be required, is a careful investigation of the nature and source of the disease, and that being satisfactorily determined, a skilful performance of those means of cure which science and experience have decided as the best; the result must ever remain with Him, whose power

vidually, are, of course, a sufficient guarantee for all that I may advance, as matters of fact, which passed under their own observation.

* Messrs. Lower and Watson did certainly oppose an operation (and this single fact comprises all the material truth contained in Mr. Williams's letter), but the specific ground of these gentlemen's objections, repeatedly and distinctly expressed, was an apprehension that it might be followed by inflammation and ulceration (as in Mr. Abernethy's case); but, as the child did *not* die from inflammation or ulceration, but from a cause the *very* opposite to either of these conditions, to take credit upon such a basis for their prophetic sagacity, would be just as sapient as the attempt to solve the celebrated naval problem, with which, no doubt, Mr. Williams is well acquainted.

† I have seen it remarked upon, I think by Dr. Baron, and I have frequently witnessed it myself, in this disease, innumerable tubercles of the minutest kind spread along in the direction of the lymphatics. In a case of this kind which I had an opportunity of examining not long since, the principal growth, when removed, weighed fifteen pounds, was a confused mass of medullary and sarcomatous substance, with hydatids in its very centre, was situated in the middle of the abdomen, and had its seat upon the vertebræ. From the main growth there extended continuous chains of innumerable tubercles, of all sizes and consistence; they ascended with the large vessels through the crura of the diaphragm, as high as the bifurcation of the trachea, around which they had extensively entwined themselves; they extended downwards also, in the course of the lymphatics, accompanying the iliac vessels to the inguinal glands, which were diseased, there were hydatids also in different parts of the abdomen.

* Need I allude to the many instances of death which have happened to *adults* apparently strong and vigorous whilst sustaining operations, from no other assignable cause than the effect produced upon the nervous system, to prove the fact of danger being at all times associated with important surgical operations, and that that danger is not peculiar to children.

it were weak to doubt, and impious to dispute. It is not, however, this unsuccessful effort, Mr. Editor, that is the real cause of the gentleman's grief; but rather the professional and public reputation which my successful endeavours have gained for me in other cases, and which, perhaps, when thus assailed, I may be justified in saying, have been neither few nor unimportant: that success, he may imagine, proves an obstacle in the way of his own magnificent pretensions, and it has therefore become an object of a rancorous and persevering hostility, which has been repeated in private slanders and anonymous attempts at defamation,* which have already secured for him, on two distinct occasions, the expression of public opinion, by his rejection from extensive and highly respectable institutions, in whose lists he sought to enrol himself.

I feel it a degrading task, to follow the offensive vituperations of your correspondent, whose present production, however, is sufficiently characteristic to impress your *professional* readers with the malignant workings of his mind; for in no part of it is there to be found a little of that sober and dispassionate reasoning, which characterises a philanthropic or scientific inquiry: that spirit, which alone forms the legitimate object of such inquiries, has given place to the malevolent complainings of envy and disappointment.

Having, as I hope, satisfactorily shown, that the operation on this infant was undertaken upon just principles, after a *minute* and *most deliberate* investigation of the case, by a consultation more extensive in number, and respectable in practical talent, than is ordinarily to be found upon such occasions;† and having unmasked the gross fabrications and unworthy motives of your correspondent, while I shall readily answer every inquiry from respectable members of the profession; I shall not condescend to notice any future lucubrations from Mr. Williams, or productions of his pen, anonymously sent forth; but shall treat with studied silence and contempt whatever proceeds from a source so impure.

I remain, Sir,
Your very obedient servant,
CORNELIUS TRIPE.

Devonport, Aug. 10, 1830.

* Vide Letter by "Chirurgicus," Devonport Telegraph, Feb. 7, 1829; of which letter Mr. Williams is the convicted author.

† Drs. Cookworthy and Magrath, together with Drs. Moore and Isbell, Messrs. Chubb, Welsh, Sparke, &c., &c., all practical surgeons, who formed the consultation, and were present at the operation, attest the accuracy and faithfulness of every portion of the report, as published in THE LANCET for January 23rd. Why did not Mr. Williams, if his intentions were of an honourable nature, publish these gentlemen's names, and state what he knew to be the fact; that the responsibility of the judgment, upon which the operation was undertaken, was equally divided among the whole of them, (their decisions upon the subject being unanimous,) instead of craftily insinuating, upon the information which he says he derived from Mr. Lower, that it was performed at the instigation, singly, of a nameless individual, whom he has chosen to designate by four asterisks?

LONDON UNIVERSITY.

THE COUNCIL, PUPILS, AND PROFESSOR PATTISON.

To the Editor of THE LANCET.

SIR,—I think it my duty to inform you of my reasons for having again called the attention of the public to the correspondence between Dr. Chapman and Mr. Pattison. Sometime after my friend, Mr. Eisdell, had sent in his letter to the Council, demanding an inquiry into certain omissions and imperfections in Professor Pattison's lectures, he informed me of what he had done, and of some of the answers, which he had received from the Council, amongst others of this—"That they did not feel themselves justified in making any inquiry on the suggestion of ONE pupil." Conceiving the '*one*' to be emphatic, I urged Eisdell to ask some of his fellow pupils, whom he had not yet consulted, for their opinions upon the subject, and, if he found that they coincided with his own, to send in to the Council another letter containing their joint conviction. Immediately after having given this advice I went to Cambridge, upon my return from which place I found that my advice had been adopted. Some time after this, I heard that the Council had called upon every gentleman who had signed this document, to send into them a written statement of the facts, which induced him to sign the document already mentioned. Previously, however, to this being done, certain of the gentlemen, who had remained longer in town than their fellow-students, deeming it strange that after a lapse of several weeks no answer had been sent to the joint communication of Mr. Eisdell and seventeen of his fellow-pupils, among whom were all the medalists saving two, drew out statements of the reasons, which had induced them to sign the memorial, and placed them in my hands, requesting me, at the same time, in their own name, and in that of those who were absent, to send them in if called for;

and further, if necessary, to draw up a memorial to present to the Council, embodying all these charges, and urging upon them the removal of Professor Pattison. This trust, from the very strong representations, which were collectively and individually made to me by these my fellow-pupils and friends, I did not hesitate to accept. As soon, therefore, as these statements had been asked for by the Council, I sent in to the Warden those left to my charge. Several weeks having elapsed, without any reply to these statements, public or private, specific or by implication, collective or individual, having been sent to the complainants, I deemed it my duty to fulfil the second part of my trust, viz., to draw up as strong a memorial to the Council as the circumstances would warrant, urging the dismissal of Professor Pattison. This I accordingly did, and forwarded to Lord Auckland. At the same time the correspondence, of which I had frequently heard, fell accidentally into my hands. Under all circumstances, I considered it my DUTY to my fellow-pupils, to the Council, and to the proprietors, to send it to you for publication; for, I felt assured that your pages would be open to Mr. Pattison, or to his friends, for a defence, however elaborate. Your last Number has proved the truth of my conviction. I now intreat you to request Dr. Davis to furnish you with the pamphlet, from which he sends the extract, in order that you may reprint it, and thus give the medical public of this country the opportunity of judging how far it answers the STRANGE and UNPARALLELED charges made in the "Correspondence." I cannot flatter myself that I am of so much importance in the eyes of my fellow-pupils, as to be such a source of hesitation to the Council, as your correspondent, "A Pupil of the University," would courteously seem to consider me. But this, Sir, I can assure you, and, through you, my fellow-pupils, that no THREATS, NO NEGLECT, NO BRIBES (for these have been offered most liberally), whether from friends or from professors, can deter me from fulfilling the trust, which they have done me the honour to repose in my hands.

I have the honour to be, Sir,
Your obliged and obedient servant,
ALEX. THOMSON.

70, George Street, Euston Square,
Aug. 16, 1830.

TO CORRESPONDENTS.

Communications have been received from Mr. Holmes—Dr. Wilson—Mr. Marryott—Dr. Corrigan—Mr. D. O. Edwards (a Paper by Baron Heurteloup)—H.—W. S.—Mr. W. A. Walford—Mr. Lofty—T. H.—A Constant Reader—Mr. W. Dobson—B. B. A.—Mr. C. Clarke—Mr. Edward Dixon—Mr. J. M. Walker—Mr. F. H. Gisborne—Mr. R. Price—A Subscriber, with a printed paper—Mr. G. Walker—Auscultator—R. S.—Dr. G. Henning—I. B.—I. N. O.—Mr. Arthur Dixon. Also "The YorkshireGazette."

The paper signed "Paulus Ægenita," has not been received at our Office.

E. R.—Thanks for the offer, but we could not insert the translation. A few of the most important passages will be selected from the work as occasion may offer.

W. T., Pembroke Dock.—Good's Study of Medicine, edited by S. Cooper: the work is expensive, but it is decidedly the best.

H. J., Harborough.—We think there is not the *deficiency* to which he alludes; if there were, it would not in the least affect the ——— ——.

Lobulus Spigelii.—The books which were in existence at the time, and the patients who were attended, or persons who witnessed the attendance.

We fear that the new institution, to be called "The City of London Medical and Chirurgical Society," is not established upon very sound principles, and that it will fail to realise the objects of its promoters.

A. O. If people are so foolish as to be gulled by such humbugs, it is impossible for us to stem the torrent of their folly.

A Constant Reader. Yes, if he be *really* a surgeon and chemist. The simple appellation of chemist is not sufficient. There must be an open shop and the usual paraphernalia of the trade.

A Pupil of the Bath United Hospital. To the first question, we reply—He can. To the second—As a surgeon, but not as an apothecary. To the third also—As a surgeon, but not as an apothecary.

Dr. Graham's certificate, and several of the above communications, will be inserted in the next Number.

BOOKS FOR REVIEW.

Practical Remarks on the Nature and Effects of the expressed Oil of the Croton Tiglium, with Cases. By Michael John Short, M.D. London. Longman. pp. 64.

De Fungi duræ matris accuratiori distinctione. Thesis. Auctor Ernestus Blasius, Berolinensis.

ERRATUM.

Page 726, close of first article, for "*Ib.*" read *Dr. Carbutt's Hosp. Report.*